AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

Vol. 93, No. 1, Serial No. 1,675

Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

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Hupp Sales Up for March by $1.2 Million

RICHMOND, Va. — Although January and February sales of Hupp Corp. were disappointing, March volume was $1.2 million greater than in March of 1960, the first gain over year-ago figures in six months, stockholders were told by Don H. Gearheart, president, at the company's annual meeting here.

The major part of Hupp's business is in the air conditioning, heating, and appliance fields.

See page 6 for earlier reports by other industry firms of signs of an upturn in business.

"If this is a signal for a spring upturn," Gearheart said, "then 1961 could be 1960 in reverse with the last quarter the best of the year. Given a reasonable continuation of this recovery Hupp could reach new highs in both sales and earnings in 1961," he added.

ASHRAE Gives Test Facility To University

Ponders Reorganization Of Research Program

NEW YORK CITY—The American Society of Heating, Refrigerating & Air-Conditioning Engineers has announced that it will donate its controlled environment facility to the Kansas State Environmental Research Center, newly-established by the Kansas State university of Agriculture & Applied Science at Manhattan, Kan.

In addition, it was announced that some other research facilities also will be relocated and that a general reorganization of the society's research program is being considered.

The environment-room action is the society's first major decision regarding its research activities since it announced in December an expanded grants-in-aid program to colleges and private laboratories and the closing of its laboratory in Cleveland.

The $150,000 environment room, now housed in ASHRAE's

(Continued on Back Page, Col. 1)

Dunham-Bush Forms New Service Group

WEST HARTFORD, Conn.—The formation of a national service organization has been announced by Edmund Adams, national service manager of Dunham-Bush, Inc. here, manufacturer of air conditioning, refrigeration, heating, and specialized heat transfer products.

Five regional service managers, one headquartered at each of the Dunham-Bush plants, in Riverside, Calif.; Marshalltown, Iowa; Michigan City, Ind.; Brewster, N. Y.; and West Hartford, and three field service engineers will work under Adams to provide on-the-spot service for all Dunham-Bush, Heat-X, and Brunner products, it was stated.

These men recently completed an intensive training course at the Dunham-Bush school in West Hartford.

Adams formerly owned and operated a refrigeration and air conditioning contracting business for 11 years and most recently was assistant plant engineer for Bostitch, Inc.

Argo L. Mattison of Marshalltown, Iowa, has been connected with application and service for the past four years at the Dun-

(Continued on Page 29, Col. 2)

Plan 4 Air Conditioned Schools In Georgia

SAVANNAH, Ga.—Frank C. Underwood, Jr., business manager for the Chatham County school board, said recently that the state has approved preliminary plans for construction of four "controlled environment" schools here.

All the schools will be completely air conditioned, have humidity control, and have windows opening onto spacious interior halls. All four will be junior high buildings and at least two will be split-level structures.

NHAW Plans for Convention In Canada May 21-23

MONTREAL, Que., Can. — Northamerican Heating & Air-conditioning Wholesalers Association will hold its spring convention at the Queen Elizabeth hotel here May 21 to 23, the association has announced.

"Tools and Jewels for Management" will be the theme of the NHAW's first convention to be held in Canada.

Two work shop panel sessions, a brainstorming session, two luncheon speakers, and a series of committee meetings are scheduled.

Work shop sessions will be devoted to "Financial tools for successful wholesale manageagement" and "solving credit problems in our ever-changing competitive economy."

Headed by a brainstorming professional, a team of 10

(Continued on Page 29, Col. 4)

Code, Proposed Laws Hold Spotlight In Four Areas

New St. Louis Building Code Effective May 1

ST. LOUIS—A new building code based on standards of performance rather than on specific commodities and articles will become effective in St. Louis on May 1.

The code was passed by the city's board of aldermen on March 17 with only one dissenting vote. It had the support of the building community.

No copies of the code are yet available, the NEWS has learned.

According to Charles J. R. McClure, consulting engineer in heating, air conditioning, and plumbing, portions of the code pertaining to the installation techniques of heating, refrigeration, and ventilating systems were prepared by members of the local chapter of the American Society of Heating, Refrig-

(Continued on Page 4, Col. 5)

N. Y. Sheet Metal Trade Seeks Equal Status

MINEOLA, L. I., N. Y.—State-wide support of bills that would give sheet metal work equal status with plumbing, steamfitting, and electrical work in the letting of contracts for state buildings is being drummed up by the Climate Control Council here.

Although the state legislature has adjourned for this year, Harry Kazakowitz, editor of the Council's newsletter, believes there is good chance of a special session later in the year. He urged the industry to take advantage of this special session to gain passage of Senate bill 3548 and Assembly bill 4097.

These bills would require separate contracts with the state for ventilating and air

(Continued on Page 29, Col. 5)

Ask Cincinnati Law To Fight 'Scare' Selling

CINCINNATI — Registration of heating contractors has been suggested here as a means to control "scare-selling" tactics said to be practiced by a few less scrupulous sales organizations.

The suggestion, made by Charles W. Gruber, air pollution control and heating engineer for the city of Cincinnati, received a mixed reaction from

(Continued on Back Page, Col. 4)

See Little Chance for Ill. Heating Code Now

SPRINGFIELD, Ill.—There is little chance that the bill proposing a state law to govern the installation of warm air heating and air conditioning systems in residences will be introduced in the present session of the Illinois state legislature.

According to some members of the Illinois State Heating Code Committee, too much revision of the proposed measure was required before the bill could be presented for legislative action. Now under consideration is a plan to have a coordinating committee work with experts on the staff of the University of Illinois to prepare a proposal that would be most acceptable to all the interests involved.

The code proposal has been

(Continued on Page 4, Col. 4)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Phil O'Connell and the Chinese Dragons

By the time you read this, "Dope" will be in Hong Kong. He won't be an innocent abroad there, however, because he's been briefed by Phil O'Connell of Bundy Tubing, who reads the Far East like he reads downcards in a stud poker game.

O'Connell and Jack Anderson largely are responsible for Bundy's cornering of the tubing market in Australia, Japan, and all points in-between.

He also happens to be one of Dope's best friends. Phil and I came to Detroit in 1930, from neighboring small towns in Illinois, and immediately entered the refrigeration business on different sides of the street.

We've been suburban neighbors for a long time, and also share a peculiar mental quirk: a joke, once heard, sticks with us forever.

Year after year we've toured convention "hospitality rooms," and offered to bet, at substantial odds, that we could finish any joke that anybody there could start. Never has this team lost a challenge.

At present Phil O'Connell is recuperating at home, assisted by his gorgeous wife, Betty, from a weird disease. It paralyzed him for months, because doctors couldn't identify it, and didn't know how to treat it.

Now it can be told: his virus

(Continued on Page 12, Col. 1)

Refrigeration Fitters Restored In So. Calif.

LOS ANGELES — Re-establishment of the right to represent union personnel working for air conditioning and refrigeration contractors has been won by Refrigeration Fitters, branch local #250, of the United Association, in Southern California, it was reported.

In a telegram from Peter T. Schoemann, UA general president, re-affirmation was given to the local to serve as the spokesman for its members.

(Continued on Page 29, Col. 2)

Air Conditioning Sales Up In 2 Areas; Airtemp Push Scores

DETROIT — Air conditioner sales in the territory served by Florida Power & Light Co., Miami, continue to score gains over year-ago periods, according to the utility.

After registering an increase of 96% in January over January, 1960, air conditioner volume in February rose 40% over February of last year. February, 1961, sales totaled 3,295 compared to 2,344 a year earlier. This brought sales for the first two months of 1961 to 7,183, up 66% from the January-February, 1960, level of 4,331.

The FPL report shows unit sales to retail dealers in areas served by the utility as reported by state wholesalers. Also included are sales by department and chain stores and some retailers who purchase their merchandise from sources other than state wholesalers.

Another report on air conditioner sales, from the Electrical League of Cleveland, showed a gain in March for central residential systems but a loss for room coolers.

Central residential system shipments in Cuyahoga County reported by league member distributors for March increased to 43 from 26 in March, 1960. However, shipments in the first quarter of 1961 were off 37%, totaling 65 compared to 103 in the corresponding 1960 period.

Room air conditioner shipments in the area declined to 547 from 719 a year earlier. For the first three months of this year, shipments totaled 1,140, down 2% from the 1,166 shipped in the like period of 1960.

DAYTON — A special wholesaler promotion of Chrysler Airtemp room air conditioners resulted in a movement of 18,950 units into dealers hands as compared to a quota of 10,000 units set for the effort, report officials of the Airtemp Div.

"It would certainly seem to indicate that the pipelines are not so choked up as some people thought," commented one Airtemp official in reviewing the results of the "Sell for Silver" promotion. It was so named because wholesale salesmen received a silver dollar for each unit moved in the promotion, and the top salesman in each wholesale setup received a special prize.

Dealers were given some special financing terms for taking delivery within a specified period.

Exhibitors Grab Half the Space 10 Months Before '62 ARI Show

WASHINGTON, D. C.—More than half of the space available for the 12th Exposition of the Air Conditioning, Heating & Refrigeration Industry has been assigned to exhibitors, it was announced by George E. Mills, show director.

The national trade show is scheduled for the Great Western Exhibit Center, Los Angeles, Feb. 12-15, 1962, under sponsorship of the Air-Conditioning & Refrigeration Institute.

Total space available for the show in present, permanent, buildings is 67,000 sq ft. As of April 20, firm contracts and space assignments totaled more than half this figure—almost 10 months before the show opens.

Meanwhile, plans for the "Air Conditioning and Refrigeration Week" activity at Los Angeles coincident with the ARI show, are moving forward.

With the show as a nucleus, several of the participating industry associations will hold their national conventions in Los Angeles. Also, the Western Air Conditioning Industries Association will stage a program of technical sessions with outstanding speakers on subjects of interest to the entire industry.

Organizations which will hold meetings include the Air Conditioning & Refrigeration Wholesalers, Refrigeration & Air Conditioning Contractors Association, and Refrigeration Service Engineers Society, in addition to the Western group, which will act as host for the entire all-industry event.

At the same time, H. T. "Hy" Jarvis, president of Recold Corp., Los Angeles, general chairman of the ARI Show Committee, announced that special promotional activities now being planned to assure a representative attendance of architects, engineers, contractors, builders, service engineers, wholesalers, and other industry groups, as well as their customers, are being handled both through Los Angeles and the Washington headquarters of ARI.

ALCO'S New P.O.S. CHILLER CONTROL
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3. H290—Line Strainer

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Present Silver Shield To L. I. Contractors

LONG ISLAND, N. Y.—At a meeting scheduled for Wednesday evening, May 3, at Saks 34th St., Mayfair Shopping Center, Jericho Turnpike, Commack, Long Island, heating and air conditioning dealer-contractors from the Suffolk marketing area will hear the full story of the Silver Shield Program.

Cooperating with the National Warm Air Heating & Air Conditioning Association is a Suffolk County Silver Shield Action Committee consisting of:

James Cowie, chairman, North Shore Sheetmetal Co., East Northport; William Barrett, Barrett Heating & Air Conditioning Co., Bay Shore; Everett E. Prime, Prime Heating & Air Conditioning Co., Huntington; Dick Paul, Twin County Heating & Air Conditioning Co., Huntington Station; Bruce Kyte, Kyte Heating & Air Conditioning Co., Hampton Bays; Frederick Robbins, Robbins Heating & Air Conditioning Co., Huntington; Allen Burns, Burns Heating Supply Co., Inc., Long Island City; Dale Kirkpatrick, Edgcomb Steel & Aluminum Co., Stony Brook.

Keco Gets Contract

CINCINNATI — Keco Industries, Inc., reported that its Industrial & Commercial Contracts Div. has been awarded a contract for the air conditioning of the GAM-SAC Facilities Service Shop at Wright-Patterson Air Force Base, Dayton.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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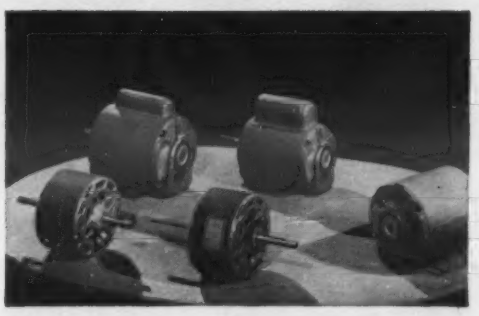

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American-Standard Div. Names Bill Gregory

NEW YORK CITY — Bill Gregory has been appointed central regional manager by American-Standard Air Conditioning Div.

Gregory

He will be in charge of all field sales activities for the entire central United States from the Canadian border and the Great Lakes south to the Texas border and the Gulf Coast. Gregory has been with the division since June 1, 1959, as a district representative.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Obituaries

Paul H. Kroeschell

CHICAGO — Paul H. Kroeschell, 69, president of Kroeschell Engineering Co. here for 28 years, died recently aboard the French liner *Liberte* en route to Europe. He had been in the air conditioning, heating and ventilating business in Chicago all his adult life, and was a past president of the Mechanical Contractors Association of Chicago.

James J. Hefley

SARDIS, Miss. — James J. (Red) Hefley, 55, owner of Hefley Refrigeration Service, died recently at his home after a long illness. A sports enthusiast, he at one time held the outboard motor Class C speed record.

Norman Suter Heads Detroit RACCA

DETROIT — At its annual membership meeting, the Refrigeration & Air Conditioning Contractors Association of Detroit unanimously elected Norman S. Suter of Norman S. Suter & Co., Inc., of Royal Oak, Mich., as president.

In addition to Suter, the following contractors were elected to serve on the board of directors:

Victor M. Fabian, Square Deal Heating & Cooling, Inc.; James Douse, Refrigeration Specialists, Inc.; and former president, John G. Hyder, Radoe Refrigeration Co.

Suter announced that he will institute a strong promotional program for RACCA contractors, as well as initiate a membership drive during his term in office.

Passage of Illinois Bill Unlikely--

(Continued from Page 1, Col. 5)

backed primarily by The Sheet Metal, Air Conditioning & Roofing Contractors Association of Illinois. It would call for the licensing of all contractors engaged in the design, installation, repair, maintenance, or alteration of residential warm air heating and air conditioning systems.

It would also require that every workman doing this kind of work be licensed.

A "grandfather clause" would permit any firm proving that it had been in the business for one year prior to the effective date of any licensing law to be issued a contractor's license without examination, on payment of a fee.

In the proposed code prepared by the State Committee, the regulatory provisions would not have applied to installations in non-residential structures having a total minimum heat loss exceeding 250,000 Btuh. Some of the provisions in the proposed measure:

Every gravity or forced-air warm air heating plant to be designed so that it heats all rooms to 72° when it is -10°F outside.

Each supply line, whether extending directly from the mixing chamber or from an extended master duct, should be sized in accordance with the cfm requirements. There shall be no standardization of supply lines unless each of the standard supply lines are properly dampered with lock damper quadrants.

All supply lines extending into or through unheated areas, must be insulated.

In perimeter warm air systems where heated air is brought to registers in outside walls, the system shall be designed to provide a perimeter outlet on each exposed wall of each room. To insure against overheating, all warm air heating plants shall be equipped at the bonnet with a limit switch, which will put the heater out of operation whenever bonnet temperature reaches 200° on a forced-air job or when it reaches 370° on a gravity job. Velocity of heater air on base registers should not exceed 300 fpm although higher velocities are permitted where high side wall or ceiling registers are used.

When the installation of a warm air heating system is completed, the job must be balanced so that the warm air for heating goes to the various rooms in proper volume. At the conclusion of any installation, it shall be the duty of the installing contractor to adjust the dampers in the various pipes so that the air delivery to the various rooms is correct. Adjustment of the system and balancing of the dampers must be made when the structure is occupied or becomes occupied. The balancing should be handled so that there isn't over a 100° temperature rise in the bonnet.

St. Louis Code--

(Continued from Page 1, Col. 4)

erating & Air-Conditioning Engineers.

This portion of the code, McClure said, depends greatly upon National Fire Prevention Association pamphlets, American Standard Association standards, American Society of Mechanical Engineers standards, and other nationally recognized design criteria.

New ventilation requirements, he noted, include a minimum of 4 cfm of outside air per person unless the building is provided with windows that may be opened to provide natural ventilation.

In addition, densely populated spaces, operating rooms, restaurants, commercial kitchens, etc. are required to have considerably higher ventilation rates.

Provision is made in the code for reduction in the minimum amount of fresh air when return air is suitably filtered and conditioned to remove smoke, dirt, pollen, and odors.

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Bryant-Hedback Opens 4,000 Sq Ft Addition To Speed Service To 300 Indiana Dealers

INDIANAPOLIS — The Bryant-Hedback Co., a leading distributor of Bryant Mfg. Co.'s heating and air conditioning equipment, has opened a 4,000-sq ft addition to its offices here.

The new building houses a reception room, general and executive offices, engineering, parts, and services facilities, the orders department, and a dealer school room.

Availing itself of Bryant's line, Bryant-Hedback has incorporated the latest technical advances in heating and cooling equipment into its new building.

Heated by both warm air and a radiant baseboard hydronic system, the offices boast a complete weather station which evaluates the factors of humidity, indoor and outdoor temperature, and barometric pressure to produce indoor automatic climate control.

Equipped with both electric and gas Bryant air conditioners, the building features four-zone control, electronic air cleaning, and a complete fresh air ventilating system.

Part of a steady growth pattern since the company's founding, the expansion parallels its increasing financial strength which has seen customer purchases from dealers rise from less than $500,000 in 1945 to over $5,000,000 for the past year.

From 1 To 21 In 15 Years

Opening a one-man office 15 years ago, owner Phil Hedback has seen the company grow to its present strength of 21 employes, including nine sales engineers.

The present addition pushes floor space to 18,000 sq ft, a step necessary, in the words of Hedback, "to provide the best in service and convenience for the more than 300 dealers in the southern two-thirds of Indiana who rely on us for all Bryant heating and air conditioning products."

A past president of the Indianapolis Sales Executives Council and currently a director of National Sales Executives, Inc., Hedback is also secretary-treasurer of the Indiana LP Gas Association.

Bryant Mfg., headquartered in Indianapolis, has consistently recognized the dynamic Hoosier as a top distributor and has awarded him six diamond sales pins for individual sales effort and for exceeding yearly quotas.

During the past year, he was regional winner in Bryant's sales district comprising West Virginia, Pennsylvania, Kentucky, Ohio, and most of Indiana.

More Work, Same Time

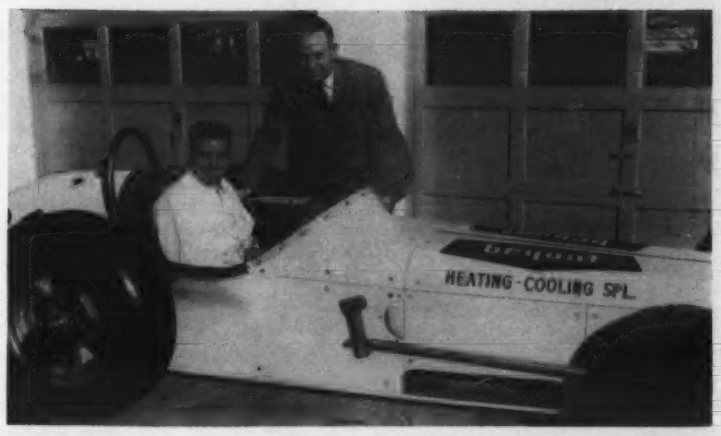
In commenting on the new building, Hedback stated, "today it's more and more apparent that businesses stay in business by increasing their efficiency. In a healthy and expanding company there is always more work to be done in the same amount of time. The only answer is to find ways and means of getting it done more efficiently."

"We designed the addition to our building with expansion in mind," Hedback added. "It's part of our philosophy to prepare for the future—to keep the company progressing and able to serve our hundreds of dealers just as efficiently as we did 15 years ago."

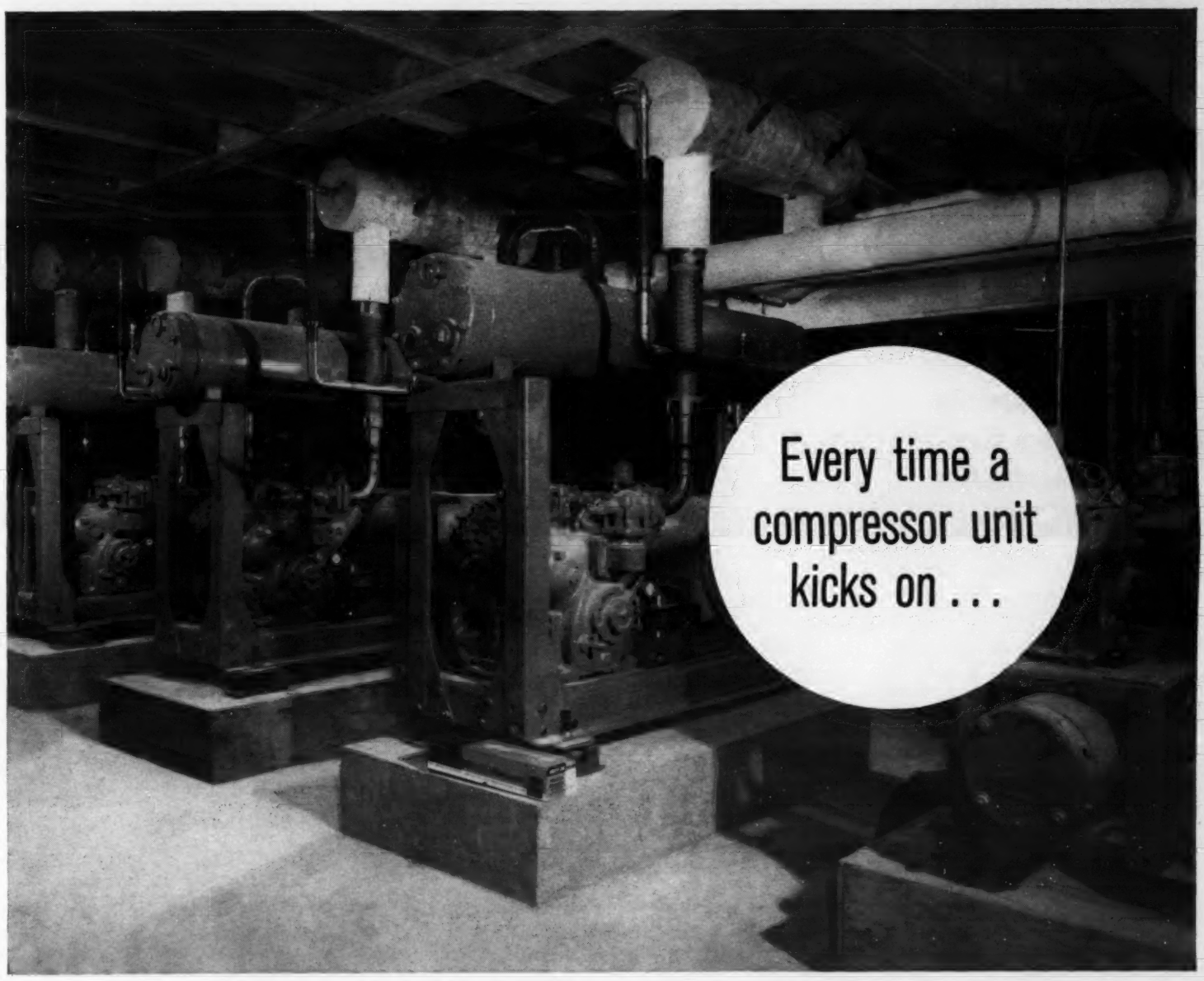
During an open house celebrating the opening of the new offices, Hedback announced that for the fourth straight year a Bryant car will be entered in the Indianapolis Speedway 500 Mile Race.

On hand with his championship car "The Bryant Heating and Cooling Special," was the driver Elmer George, former midwestern sprint champion.

Although a sincere racing enthusiast with a formidable knowledge of the subject, Hedback has never concealed the fact that his interest in backing a championship car is strongly enhanced by the publicity which evolves on his favorite name, "Bryant."



ELMER GEORGE will drive the all-new Bryant Heating & Cooling Special in the 1961 "500" mile race. Shown with George is Phil Hedback, owner of Bryant-Hedback Co., whose dealers have joined together to sponsor the racing car.



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Bottoming Out?

March Sales, Profits Up for Robertshaw

RICHMOND, Va.—The month of March offered the first hopeful signs that the impact of the nationwide business recession on Robertshaw-Fulton Controls Co. may be diminishing, Thomas T. Arden, president, told stockholders at the company's annual meeting here.

Sales and earnings for the last half of 1960 were generally well below the first half of that year. This situation prevailed throughout January and February of 1961, with the company operating profitably but well below normal expectations.

March, however, brought an increase in sales, accompanied by a substantial increase in profits. With March profits amounting to 20 cents a share, net income for the first quarter was equal to 32 cents a share.

Arden told stockholders that releases of the company's products for delivery in April are such as to indicate that sales in April may well exceed those for March, giving some reason for optimism with respect to a turn in the long recession.

Controls of America Notes Upturn Since Low In December

SCHILLER PARK, Ill.—Roy W. Johnson, board chairman of Controls Co. of America, and Louis Putze, president, said recently it "appears that for us the business decline reached its low point in December.

"We have had an increase in backlog and a slight increase in business since then," they stated in a letter accompanying the firm's annual report. "Profits from operations during the first quarter of 1961 are higher than in the last quarter of 1960. . . .

"While we have no clear-cut evidence of a sharp pick-up in business, we expect sales to increase in the second quarter and, according to responsible economic forecasts, the second half of 1961 should be better than the first."

Borg-Warner Sales, Earnings Hit 9-Month High In March

CHICAGO — Monthly sales and earnings of Borg-Warner Corp. reached a nine-month high in March, indicating the company has passed its low point in the current recession and can look forward to a gradual increase in business the rest of the year.

So stated Robert S. Ingersoll, president, at the 33rd annual meeting of the stockholders in the Exhibition Hall in the Borg-Warner building.

"We are pleased to tell you that all indications point to improved sales and earnings for the balance of the year except for the normal seasonal decline in the third quarter," he said.

"In fact, we anticipate our trend in sales and profits to be exactly the reverse of last year when business turned down at the end of the first quarter and continued to recede until March of this year.

"The best evidence we have that the low point of this business cycle has been reached was that March sales and earnings were the highest for any month since June of last year and that April is looking equally promising."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

McQuay Sales Up For Fifth Year

MINNEAPOLIS — Sales of McQuay, Inc., increased for the fifth consecutive year in 1960, setting a new sales record for the company, but net earnings were slightly down.

This was revealed in the company's annual report, made public by B. E. James, president.

Gross sales of McQuay products for 1960 totaled $18,302,000. This compares with sales of $17,221,000 for the year ended Dec. 31, 1959. Net income was $487,256 last year, compared with $517,153 in 1959.

This amounted to $1.16 per share on the 418,932 shares of common stock outstanding at the end of 1960, compared with $1.32 a share on 386,798 shares of common stock in 1959.

"Our business year followed closely the pattern of the majority of manufacturing industries, being very active at the beginning of the year and slower than expected at the end of the year," James said. "However, we countered the industry trend with a modest increase in gross sales.

"Price decreases in copper tubing and aluminum strip, which are a dominant part of our total inventory, adversely affected our profit picture due to the losses sustained on our inventory."

Airtemp To Cool 4 More Tankers

DAYTON — Chrysler's Airtemp Div. has received a contract to provide the air conditioning system for four new Gulf Oil Corp. tankers.

R. B. Stotz, general manager for Airtemp's Applied Machinery & Systems Dept., said an average of 68 tons of air conditioning equipment would be installed in the four ships.

Chrysler will provide the water-cooled condensing units and coils for the air conditioning systems. The first units will be shipped in June. Chrysler has cooled six other Gulf ships.

In the RUSH

INSIST ON

gen

SUPER-DRY

The remarkable dryness and purity of "Genetron" Refrigerants always pay off in dependable, trouble-free performance. That's why "Genetron" Super-Dry Refrigerants are accepted, approved, and *preferred* both for original equipment and replacement charging.

"Genetron" fluorinated hydrocarbon refrigerants are *right*—and they are *ready*. Your "Genetron" wholesaler has them in stock, and is prepared to supply your needs . . . in a hurry! Ask him, too, to show you the new "Genetron" Kit for field testing hermetic burnouts and the new pressurized "Genetron" 11 solvent cylinders for cleaning mildly contaminated systems after burnout.

Installing Heat Pumps In Houston Homes Results In Satisfied Users and Builder, and Happy Dealer

HOUSTON, Texas — Installation of 2-ton and 2½-ton General Electric "Weathertron" heat pumps in a builder's new home tracts here has created satisfied users, a satisfied builder, and a happy dealer.

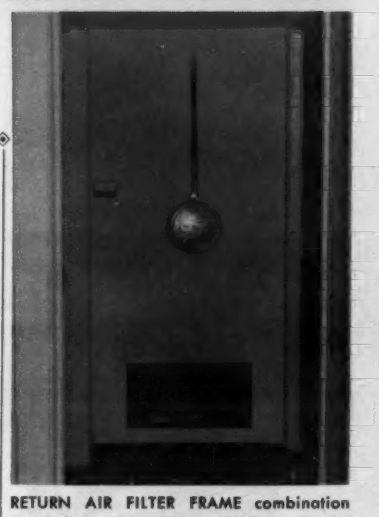
When Colonial Building Co. was making plans for its "All American Homes" tract in Houston's Meredith Manor, the original thought was to equip these homes, some selling for as little as $11,300, with a furnace and an attic fan.

However, Jolley & Steele, a Houston contractor-dealer, approached the builder with a proposal to heat and cool the homes with a heat pump installation at a price that would not add excessively to the cost of these homes.

The air conditioning firm had studied the plans for the "All American Homes" and found that although the exteriors represented a variety of architectural styles, the interiors were almost identical. By incorporating into the plans a closet, which extends from the inside hall to the outside wall of the homes, the way was paved for an efficient yet economical heat pump installation.

The self-contained G-E model WTC heat pump is installed on a slab outside the house adjacent to the outside wall of the closet. The conditioned air is ducted through the wall, up the wall inside the back of the closet, across the ceiling of the closet, then down the central hall beneath a furred-down ceiling.

SLAB-MOUNTED General Electric heat pump supplies conditioned air through wall connection to furred down ceiling in central hallway, and thence to high wall outlets.



RETURN AIR FILTER FRAME combination is located under a raised flooring in the closet, being almost completely unobtrusive. Object on closet door is decorative item.

* * *

High-wall registers deliver the air from this central duct into each room. Return air is fed back to the unit from a return air-filter-frame combination in the hall, under a raised flooring in the closet, then back to the unit.

This ingenious installation provides for all the "machinery" and any inherent sound to be placed outside the home, and little if any of the usable floor space in the home is used.

Since most of the installations are virtually identical, Jolley & Steele has been able to prefabricate most of the ductwork, thus bringing about installation economies.

With 6 in. of insulation in the ceilings, and 3⅝-in. batts in the walls, reports from users on operating costs through the first winter have been most favorable, the dealers report.

Public acceptance of the heat pump conditioned homes in Meredith Manor subdivision was so great that Colonial built 50 similar homes in the Westbury subdivision, and then more than doubled this number of homes there, and is now opening a new tract in Meredith Manor.

Gibson Dealers To Get Jamaican Jaunt Bonus

GREENVILLE, Mich.—Dealers who qualify for Gibson's "Panama Party" convention trip will receive an extra added bonus stopover at the Royal Caribbean Sea Club in Montego Bay, Jamaica.

This was announced by W. C. Conley, president of Gibson Refrigerator Sales Corp., subsidiary of Hupp Corp.

There will be no extra point requirements for the added Jamaican jaunt, Conley stressed.

months coming up

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REFRIGERANTS

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genetron 113 $C_2Cl_3F_3$ PURPLE LABEL
TRICHLOROTRIFLUOROETHANE

genetron 114 $C_2Cl_2F_4$ BLUE LABEL
DICHLOROTETRAFLUOROETHANE

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GENERAL CHEMICAL DIVISION
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May Climatological Evaluation Chart Gives '59 and '60 Ratings for 31 Cities

NEW YORK CITY—Continuing a practice started in 1959, the NEWS this spring and summer will publish a "climatological evaluation of air conditioning weather" for the key months (May through August) of last year compared to "normal" and the previous year.

The evaluation has been made, as before, by Weather Trends, Inc., a private weather forecasting and weather-recording organization.

On this page is presented the first of four charts which comprise the evaluation. The charts for June, July, and August will appear in subsequent issues.

They are being reproduced with the thought that they will be of value to those in the air conditioning industry who are gearing promotional efforts to individual markets.

Although the findings are presented in simple, summary form, a considerable amount of data was reviewed and analyzed, including:

(1) Average monthly and average maximum temperature; (2) number of days of 90°, or over, compared to normal and last year; (3) duration and extent of hot spells, if any; (4) other elements, such as number of wet days, humidity readings, percentage of normal sunshine, etc., to see if there were unusual departures.

As before, Weather Trends placed ratings of 5 ("superior"), 4 ("favorable"), 3 ("normal"), 2 ("unfavorable"), or 1 ("poor"), on the air conditioning "sales climate" for the 31 cities covered. In addition, a finer breakdown of the so-called "normal" category was made, using 3, 3—, and 3+.

Also, the air conditioning weather for each of the 31 cities during the period covered was rated as "much better," "slightly better, "better," "similar," "worse," "slightly worse," or "much worse" than in the corresponding month of 1959.

Weather Trends' evaluation for the four key months of 1960 compared to normal shows that the air conditioning weather was something less than a great joy to the industry.

For May, for example, 22 of the 31 cities got a rating of 3 ("normal"), six were rated 2 ("unfavorable"), and one was 1 ("poor"). Only two got a 4 ("favorable") rating and none was rated 5 ("superior"). Compared to 1959, 20 cities were rated as worse, slightly worse, or much worse; nine as similar; and only two as better or slightly better. None was much better.

June was a little better. One city got a "superior" rating and four a "favorable" rating, while the number of cities rated "normal" totaled 18. Eight were rated as "unfavorable" and none as "poor."

In July, the number of cities getting a "superior" rating rose to four and the total with a "favorable" rating moved up to five. However, only seven got a "normal" rating and the number rated "unfavorable" rose to 10 and those rated "poor" increased to five.

The August chart looks about like that for June, with 20 cities being rated "normal." In the "right" direction, four were rated "favorable" and one "superior"; in the "wrong" direction, five got a rating of "unfavorable" and one a rating of "poor."

●

Climatological Evaluation

Legend for 1960: 5—superior; 4—favorable; 3—normal; 2—unfavorable; 1—poor.

Legend — Comparison 1959: MB—much better; B—better; SB—slightly better; S—similar; MW—much better; W—worse; SW—slightly worse.

Key City	MAY, 1960 Compared to: Normal	1959
Atlanta	3	S
Baltimore	2	MW
Birmingham	3+	S
Boston	3+	W
Buffalo	4	S
Chicago	3	W
Cincinnati	2	MW
Cleveland	2	MW
Dallas	3	S
Denver	3	S
Des Moines	3—	SW
Detroit	3	SW
Houston	3	SW
Indianapolis	2	MW
Kansas City	3	SW
Los Angeles	4	B
Memphis	3	S
Miami	3	S
Minneapolis	3—	W
New Orleans	3	S
New York City	3—	MW
Oklahoma City	3—	SW
Omaha	3—	S
Philadelphia	3—	MW
Phoenix	3+	SB
Pittsburgh	2	W
Portland, Ore.	1	SW
Raleigh	3—	SW
Richmond	3	W
St. Louis	2	MW
Washington, D. C.	3	MW

Prepared by: Weather Trends, Inc., 550 Fifth Ave., New York City 36.

Trane Starts Addition For Compressor Output

LA CROSSE, Wis. — Construction of a 28,000-sq ft addition to a Trane Co. plant here has started, the company announced.

Reason for the new addition —which will represent an investment of $600,000 in building, machinery, and equipment —is the need for more production space for the new compressor lines introduced recently by Trane.

The new addition brings the total expansions announced by the company during the past six months to 324,500 sq ft. These expansions include construction of a new plant at Salt Lake City; an addition to its Clarkesville, Tenn. plant; and two previous additions to its La Crosse manufacturing facilities.

Superior Supply Trade Show Marks Warehouse Opening

TOPEKA, Kan.—To mark the opening of a full-line stocking warehouse at 1309 W. 6th St. in Topeka, Kan., Superior Supply Co., refrigeration, heating, and air conditioning parts and accessories wholesaler, Kansas City, Mo., scheduled a trade show for May 1 and 2 from noon to 8 p.m.

Factory representatives will be on hand to demonstrate their lines and answer questions, it was announced.

The company said the new facility, Superior Supply of Topeka, Inc., was opened in order to give its Kansas customers faster and better service.

Along with complete stocks of nationally-known brands of refrigeration, heating, and air conditioning parts and supplies, the Topeka establishment will feature "Copelametic" condensing units and parts; Alco expansion valves and solenoids; Kramer, Larkin, and "Krack" coils; "Crystal Tips" ice makers; and Mueller "Drymaster" driers, it was pointed out.

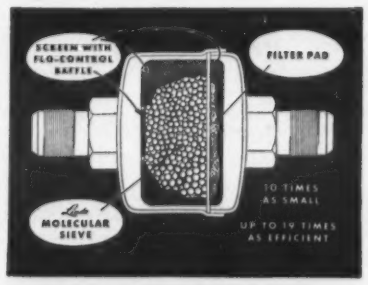
NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

COMPACT SIZE...LARGE CAPACITY

Test them, use them, and you too will find a new high in TMC Filter-Driers with Linde Molecular Sieve. Their radically improved Moisture Removal, Filtration, Acid Removal and Pressure Drop have been proved by recognized authorities and approved as original equipment by foremost manufacturers.

SAVE ALL ALONG THE LINE

Fifteen-ton TMC Filter-Drier fits palm of your hand...saves space in refrigeration systems, in your stockroom, in your service trucks. Simplified line means simplified ordering, reduced inventory, lower investment. PRICES...you'll get a pleasant surprise! It will pay you to write for QUESTIONS and ANSWERS Bulletin 1157 RIGHT NOW!



TUBE MANIFOLD CORPORATION

435 Bryant Street • N. Tonawanda, N. Y.

Another Product of the World's Largest Manufacturer of Liquid Receivers

Locating Coils In Walk-Ins

By Jack F. Wasson, Young Supply Co., Detroit

Through the NEWS, several inquiries have reached us which show a need for information concerning the location of coils in walk-in coolers. Actually, the many questions can be answered in a general fashion.

COOLER SHAPE IS FACTOR

When a walk-in cooler is square in shape, or approximately so, the unit cooler can be mounted on either the short or long wall. In the event one of the walls is considerably longer than the other, i.e., such as a 10 by 30-ft cooler, the unit cooler should be placed near the short wall blowing the cooler length.

SHOULD NOT BLOW TOWARD DOORS

In general, unit coolers should not blow toward the door opening. If no alternate position is available, except one blowing toward a door, a door switch should be installed to interrupt the fan motor circuit while the door is open. This will prevent cold, dry air being blown from the cooler, through the door opening.

Naturally, warm, humid air from the outside areas will then tend to flow into the cooler, increasing the frosting of the fins of the coil and cooler load considerably.

In the case of our 10 by 30-ft walk-in cooler with a door on one of the 10-ft walls, it may be advantageous to consider the use of several completely circular coils in the center of the ceiling.

Another alternate would be use of a half round coil or coils (in this case) mounted along the 30-ft wall.

CORNER PLACEMENT

A standard type of unit cooler can be placed diagonally across the corner of a cooler to forestall the problems above. Today, however, specific coils are made for corner installations, and if possible, such coils should be employed as they permit ease of service.

TEMPERATURE VARIATION

The question of how much the air temperature would vary from one end of the cooler to the other depends on several factors, such as coil operating temperature difference, length of "throw," shape of and construction of the cooler, and location of any product load within the cooler.

Also, if the air from the unit cooler hits a pile of product in front of the unit cooler, it could flow evenly to all corners and give temperature deviations of less than 1°F.

If the box is, say, 10 by 30 ft, with the coil blowing across the 10-ft space with the coil mounted midway on the 30-ft wall, a box temperature variation of 5° might well occur. In such a case as the latter, I would say that attention to some of the items mentioned at the beginning would improve the relatively wide differences in box temperatures.

Hill Elects Corbin

TRENTON, N. J.—Harry N. Corbin, vice president in charge of sales of C. V. Hill & Co., Inc., here has been elected to the board of directors of C. V. Hill & Co. and C. V. Hill of Canada, Ltd., Barrie, Ont., Can., it was announced by Glennon J. Doyle, president of both firms.

Howard Refrigerator Moving to New Functionally Designed Building

PHILADELPHIA — Howard Refrigerator Co., Inc., has begun the moving of its general offices and production facilities to a new 100,000-sq ft building erected on a 6-acre industrial site at Grant Ave. and Blue Grass Rd.

When the move is complete, according to Albert Fogel, president of Howard, the company will have consolidated its operation from Plant I on Worth St. and Plant II on Huntington St. into a one-story, functionally designed building. As each department completes its present production assignment in the old plant, it will be moved to the new location.

In addition, new production methods and equipment have already been installed in the new plant, including "newest innovations in electrically controlled gunwelding on an assembly-line basis."

Coupled with greater demands for Howard products, "continued contract awards from the United States Armed Services have increased our over-all production requirements beyond the capacity of our present plants and facilities," Fogel noted. It is expected that the completed new plant will immediately allow some three times present production capacity; long-range plans call for turning out five times the present dollar volume. Included in the long-range plans is an extension of 65,000 additional square feet.

Horace B. Glover, vice president of sales, stated that Howard expects to close its fiscal period with the highest sales volume in the company's history. Glover added that several manufacturers have indicated a possible interest in having Howard manufacture private-brand fixtures for them in the eastern market; the company is studying the implications and ramifications that such cooperative manufacturing entails.

Both Fogel and Glover are highly optimistic for the coming year; the company is moving into the new plant and the new fiscal year with a considerable backlog of orders.

For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

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UCON IKE:

THE SHIRT OFF HIS BACK

For buying Ucon® Refrigerants in 125-lb. and 145-lb. cylinders

With the big season coming up ... up on refrigerants ... cylinders of ...

BY POPULAR DEMAND ... The Ucon Ike SHIRT Premium Offer Has Been Extended One Month NOW Through MAY 31ST!

See Your Wholesaler For The Details!

...North-... the brass dust cap on the valve ... cylinder of Ucon Refrigerants (125-lb. ...inders of Ucon Refrigerant 22, too), you'll find a Ucon Ike Seal. Simply mail two of these seals, together with your name, and the name of your wholesaler on your company letterhead to: Ucon Ike, P.O. Box 1010, Grand ...ion, New York 17, N. Y. Applications must be postmarked no later than April 30th, and no earlier than April 1, 1961. And don't forget to include your shirt size! (Small, Medium, Large or Extra-Large.) While you're at it, any comments you'd care to include on the Ucon Refrigerants line will be most welcome. As soon as we hear from you, your Ucon Ike Sport Shirt will be rushed on its way.

*Remember—this offer is good from April 1st through April 30th only!

For Economy & Convenience plus The Shirt Off Ucon Ike's Back—FREE
Specify 145-lb. Cylinders of Ucon® Refrigerants

UNION CARBIDE product Ucon® refrigerants — exclusive sales agent ANSUL

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WATER COOLER
10 GALLON PRESSURE TYPE

*$139.50
*To Dealers Only

Attractive • Sturdy • Economical • Stainless Steel Drain Top • Nickel Finished Copper Cooling Tank • ⅓ h.p. Tecumseh Hermetic Unit • Pre-Cooler • 5-Year Warranty on Refrigeration Cycle • Conforms to Government Specifications •

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REMCOR
Model CW10A

Also 5 gallon Bottle Water Cooler—*$89.50

Round Three

New NAPC Folder Adds Fuel To Hassle Over Separate Vs. Single Bid Contract

WASHINGTON, D. C. — The National Association of Plumbing Contractors, which is seeking to gain acceptance for the principle of separation of mechanical work from the general contract in public and private construction, has just come out with a followup folder to its year-earlier brochure, "Economy and Efficiency with Separate Mechanical Contracts."

"It was the appearance of this brochure in March, 1960," the NAPC noted, "that elevated the temperature to the boiling point in the running controversy between the Associated General Contractors of America on the one hand and various segments of the mechanical contractor on the other over relative merits of separation of mechanical work versus the single construction contract.

"The AGC espouses the single contract method. Round two came shortly after the first of the year when AGC issued its own brochure extolling the method in rebuttal to NAPC's [brochure].

"The appearance of NAPC's followup folder may be considered Round Three," the NAPC declared, "since it provides fresh fuel to fire up the controversy anew, bolstered by endorsements of the separation principle from members of the U. S. Senate, the American Institute of Architects, industrial engineers—even several leading general contractors themselves.

Advantages of Separation

"In the introduction, the new separate mechanical contracts folder of NAPC establishes three principal advantages of separation to owners who have contracted for construction work, as follows:

"(1) Direct control of mechanical work (plumbing-heating-cooling-electrical) involved in a given project.

"(2) Economy with the assurance of lower over-all cost.

"(3) Pinpointing of responsibility for mechanical work where it belongs—with the mechanical contractor on the job."

One section of the folder cites comparative figures for four jobs, bid in each case both as a single contract as well as a contract with separation of mechanical work.

"In each instance," NAPC asserted, "there was a saving—anywhere from 11 to 15%—in over-all costs with separation, as compared with the single contract method."

Given Wide Distribution

The NAPC announcement continued:

"The widest possible publicity and distribution will be given to the followup folder by NAPC, virtually duplicating the pattern when the separate mechanical contracts brochure was released a year ago.

"Complimentary copies were sent to every registered architect in the country, every member of Congress, the full membership of the Consulting Engineers Council, to the entire NAPC membership, and to hundreds of top construction industry officials. In addition, every member of the American Hospital Association, the American Osteopathic Hospital Association, and the American Nursing Home Association received copies."

Response to the initial brochure mailing was "nothing short of phenomenal," according to NAPC President Carl N. Finley, who expects the followup folder mailing in turn to create a sizeable impact on the various groups concerned.

Literally thousands of letters, with construction industry recipients endorsing the separation of contracts principle 25 to 1, poured into the Washington office following the brochure mailing, Finley added.

Mailings of complimentary copies of the new folder are now being made in sequence to the different groups concerned. Quantity lots, based on a unit price of two cents plus postage, are available through the Washington office of NAPC for wider distribution by individuals.

The followup folder on separation of mechanical contracts was prepared by the Technical Department of NAPC, under the general chairmanship of Fred A. Schmitz, Redwood City, Calif.

16,300 FHA Starts

FHA Reports March Housing Starts Rise Substantially over February

WASHINGTON, D. C.—FHA mortgage insurance applications and housing starts were up substantially in March compared to February, according to preliminary figures released by the Federal Housing Administration.

The estimated annual rate of FHA applications on new homes, adjusted to allow for seasonal factors, rose less than 1% in March, but the existing-home annual rate was the highest since April, 1959, the FHA said.

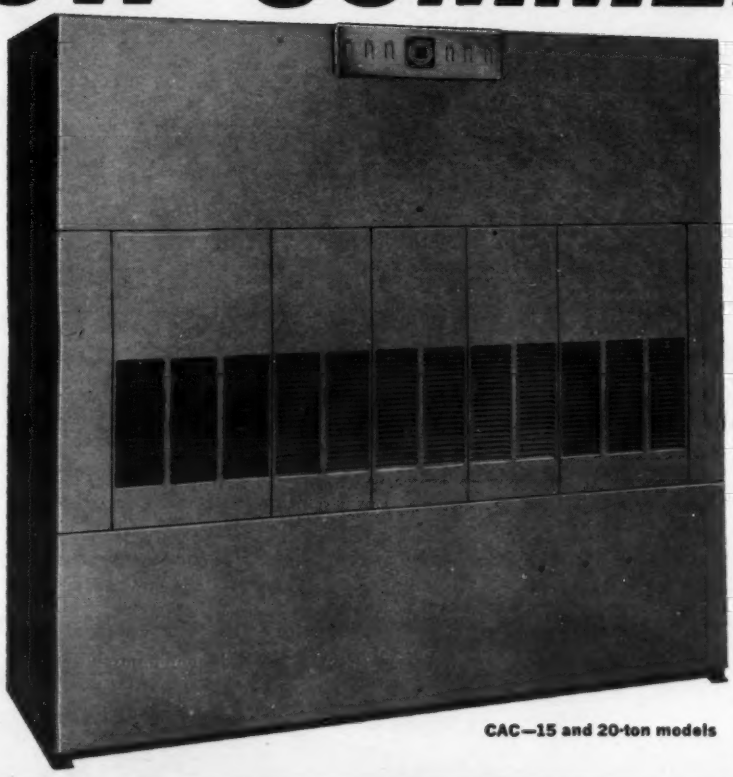
"Total March applications on new and existing homes together were up 38% from February to 74,200," it was stated. "Multi-family project applications rose 25% to 8,100 units (exclusive of applications covering 598 beds in nursing homes).

"New-home applications increased 42% in March to 24,000 units, but the seasonally adjusted annual rate rose only fractionally to reach 223,000 units.

"Existing-home applications on 50,200 units were 37% above the February volume, and the seasonally adjusted rate of 526,000 units was 8% higher than in February.

"The 16,300 home units started in March under FHA inspection represented a 57% increase over February, and the adjusted annual rate rose 10% to 197,000 units."

NOW-COMMERCIAL



CAC—15 and 20-ton models

NEW!

CAC Units (Water or Air Cooled)—These units are designed for use in restaurants, supermarkets, offices, factories, churches, larger homes, etc. They are available in both packaged and split-system types. The cabinets of the units are compact (see size table, right) and the units are easy to install. They are available in 3*, 5, 7½, 10, 15 and 20-ton cooling capacities. The 3, 5 and 7½-ton units are equipped with a single compressor, the 10-ton units with a single compressor or double compressors, and the 15 and 20-ton units each have two compressors. Optional plenums are available that have four-way adjustable grills. All

SPLIT SYSTEM AIR CONDITIONER

RC-B
Horizontal with Universal Blower
22,000 to 82,000 BTUH

RC-H
Horizontal
21,600 to 56,000 BTUH

CONDENSING UNIT

AC-B
2, 3, 4, 5 & 7-ton cooling capacity

EVAPORATORS

The RC-B evaporator, with its universal blower, can be mounted with its own ductwork or used where a furnace has insufficient blower capacity. The three other "add-on" evaporators shown here offer complete versatility of installation to a dealer.

RC-V
Vertical
22,000 to 55,000 BTUH

RC-C
Counterflow
21,000 to 46,000 BTUH

THE COMPLETE LINE IS

VALVE OPERATING UNIT demonstrates the quiet opening and closing action of new "Quietrol" fan coil control valves. "Quietrol" valves have been designed for hot or chilled water fan coil units. With slow-closing action to eliminate water "hammer' they reduce noise to a minimum, according to the manufacturer, Jackes-Evans Mfg. Co.

Only Partially Successful

Navy Tests Refrigeration for Keeping Arctic Soil Foundations Frozen

PORT HUENEME, Calif.— First attempts at using refrigeration to keep soil foundations under buildings permanently frozen in Arctic areas have been only partially successful, according to a report issued by the U. S. Naval Civil Engineering Laboratory here.

Actually, tests were conducted on a model slab similar to those which would be used as foundations for buildings to be set on permafrost.

"In the arctic where the subsoil is frozen the year round," explains the report, "structure foundations are expensive. They must prevent heated buildings from thawing the underlying ground to avoid settling and heaving."

Present construction practice is to place the foundation on pilings several feet above the ground. Natural air circulation under the building carries off any heat which escapes through the building floor.

In the test, refrigerated pipe grids were placed under the model slabs and were connected to a heat pump which absorbs the transmitted heat. "This heat can be returned to the building, if desired."

The naval report, after describing the test conditions, and results, recommends that further studies be conducted with lower brine temperatures in the ground coils.

What They're Saying, Doing

On the Industry's Firing Line Today

THIS COLUMN SPOTLIGHTS current outstanding activities and thought-provoking attitudes of those who are engineering, selling, installing, and servicing the industry's products. In some instances, for good reason, the source must remain anonymous.

Why Do Architects, Engineers, Mfrs., Contractors Resist Product Changes?

By Frank J. Versagi

"Why do architects, mechanical engineers, mechanical contractors, and manufacturers of large air conditioning equipment resist changes to the extent of preventing improvements in air conditioning equipment that reduce first cost, space consumption, and operating expense; that solve problems, improve automation, and in general further the interests of the industry?"

Asking this question was A. I. McFarlan, president of A. I. McFarlan Co., New York City. It come after McFarlan had spent an hour discussing the 3-pipe system for air conditioning and heating which he invented. Speaking to the Detroit chapter of ASHRAE, he mentioned that, even after 12 years of proved performance of the 3-pipe systems, his company's business is coming from purchasers' insistence, rather than from specification by engineers and architects.

"For at least ten years, the value of high water range across cooling coils has been proven by our installations," claims McFarlan. "In a recent ASHRAE Journal paper, B. P. Morabito, Carrier Corp., presents a most conclusive case for higher water ranges. Yet, if an engineer turns to any manufacturer's literature for centrifugal compressor ratings with water leaving the cooler above 50°F, which he needs for staging when using 70-80° off coils, he will find a complete absence of such valuable data.

"Will consulting engineers and manufacturers devote time to investigate and recommend equipment which will be less costly as well as solving industry-wide problems?"

Repeatedly offering data to support his contention that the 3-pipe system is a superior form of heating and cooling (at present, only York Corp. is licensed to market the system), McFarlan asked more questions:

"Why is it that engineers continue to specify equipment which continues to freeze at a terrific rate, and mechanical contractors continue to install this equipment, in many cases being forced to pay for the damage to the coils and other property resulting from these freeze-ups?

"How much does the so-called 100% outside air method contribute to the freeze-up problem?

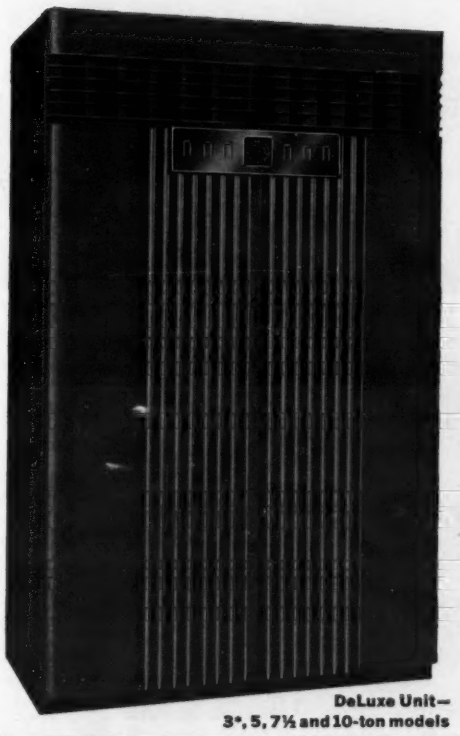
"Why do architects and air conditioning consultants treat engineering contractors like untouchables? Could they not take a leaf from the legal and medical professions and recognize the value of another engineer developing installing, and proving at his expense, improvements so urgently needed?

"How could this be accomplished without combining engineering and contracting?"

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

OR RESIDENTIAL-

NEW!



air-cooled models can be used on low ambient applications. The economy version of the 3, 5, 7½ and 10-ton units costs the dealer approximately 5% less, so he's ready to meet competition where price is the deciding factor. The mechanism is the same as the de luxe model, but the unit has a simpler grill.

*Available only in water-cooled type.

	3	5	7½	10	15	20
H	85¾	85¾	87¾	83¾	80	80
W	42	42	50	66	84	108
D	24	24	30	30	31¼	31¼

DeLuxe Unit— 3*, 5, 7½ and 10-ton models

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AC-BR Outside Unit 3 & 5-ton

SPLIT SYSTEM

RC-BR Inside Unit with Universal Blower

SELF-CONTAINED PACKAGED UNIT

The ACP is a complete, self-contained air conditioner with high-capacity blower. It is designed for installation in attic, breezeway, utility room, basement, crawl space, through-the-wall or outdoors. 2, 3, 4 and 5-ton cooling capacity.

ACP

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PACKAGED UNIT

ACPR 2, 3, 4 & 5-ton

Get the data sheets and price lists on these units today—your American-Standard Air Conditioning Division Distributor has them. This distributor is a specialist—selected because of his experience, dependability and outstanding service facilities. He always maintains an adequate inventory of products for your needs, and he will deliver promptly. Call him today.

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AMERICAN-Standard
AIR CONDITIONING DIVISION

AMERICAN-STANDARD!

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

is the rare Gullion's Barre, and it's akin to polio in effect. Phil now is doing nicely, thank you, and (Warning!) a slicker card sharp than ever.

Our many mutual friends abroad can breathe easier, now. Total recovery should be the deserved reward of this wonderful guy, who is one of Nature's Noblemen.

Incidentally, O'Connell and Anderson have written a hilarious guide to Hong Kong and Tokyo entitled, *"An Invitation to Bankruptcy."*

Have You One at Home?

Take it from high school counselors and teachers, no one is more hilarious than a teenager. Unless it's his mother or father.

While counselors chuckle over screwball absentee excuses written by imaginative mothers and fathers, teachers cackle over answers to examination questions written by pupils.

Cooley High School (Detroit) Counselor J. Robert Schindler's prize absentee excuse was intended to read: "Please excuse Johnny for being absent. It was all a mistake."

The real mistake was that the Mother forgot to include the word "absent."

From the files of teacher Grace E. Ross comes the note which asked that a girl's absence be excused because she "stepped on her wrist and sprained it."

Topper is the student in Mrs. Betty Larimore's study hall who missed school due to a case of "athlete's foot on her hand."

Miss Ferne Loomis, an English teacher at Hamtramck High School, got these laughs from a recent batch of examination papers:

"The sidewalk was made of pomegranate."

"He gave a vesture to leave."

"He made a skeptical of himself."

"An allergy is a figure of speech."

"Magellan circumcized the world."

Story from Canada

To ward off hunters, Canadian writer Farley Mowat put up signs around his farm announcing — "Danger — Radiation Hazard to Unprotected Personnel."

It worked. Nobody would even tour past Mowat's farm.

Four men eventually drove up in a black car labeled "Ontario Department of Health." They cruised about with a geiger counter stuck out of the window.

"My dear sirs," Mowat intercepted them, "you've spent too much time studying engineering and not enough studying English. Those signs simply mean that, if you walk on my property stark naked on a sunny day, you'll get a sunburn."

Add Newspaper Boners

Science has entered the sporting goods field with a vengeance. Who would ever have thought that a rifle made substantially of nylon, plastic fishing worms, and portable air tanks would someday be available for the millions?—J. G. Taylor Spink in the *Sporting Goods Dealer.*

Franklin County Team Leads All the Way in Downing Bourbon. — *Frankfort* (Ky.) *State Journal.*

All-A pupils have been named. The list covered the fourth sex-weeks' grading period — *Little Rock Arkansas Gazette.*

Woman Living on Houseboat Killed by Train. — *Louisville Courier-Journal.*

President Kennedy, acting on a sip, has stopped construction of a $200,000 addition to an officers' club in Europe.—*Boston Traveler.*

Stories of the Week

So overwhelmed by the force of the Kennedy Family are some Republicans that they're resigning themselves to:

Jack for eight years.
Bobby for eight years.
Teddy for eight years.

By that time it will be the Orwellian 1984 — and Big Brother will be watching you!

It doesn't pay to argue with your wife. The hours are too long!

If you bungle raising your children, I don't think whatever else you do well matters very much.—JACQUELINE KENNEDY.

Out of Our Global Mailbag

London, England

Editor:

Congratulations on reaching the stage where you have been able to hand over some of your responsibilities. I do not know if "The Conscience of the Industry" will be the same again, but I wish you the best of luck.

However, I am really writing to thank you for your letter to my young son at Cambridge and to say that he is really looking forward to his trip to the states.

Meanwhile, I told my son he should always add a short story when writing to you, so I had better tell you about this young fellow of 60 or so who was being complimented on his physique by the doctor.

"Oh, yes!" he said, "We are a very healthy family. I am playing tennis with my father tomorrow on his 80th birthday."

"That's wonderful," said the medico. "It's really nothing," said the other. "On Wednesday

End Sight, Sound and Water Problems with

LARKIN ZEPHYRCON

Vertical Discharge Air-Cooled Condensers

Capacities from 5 to 60 tons—low silhouette models

OUTSTANDING FEATURES

- Patented LARKIN cross-fin coil—aluminum fins bonded to staggered copper tubes.
- Circuiting designed for counter-flow operation.
- Low-speed fans, dynamically balanced, assure top efficiency, quiet operation.
- Each fan has two matched v-belts.
- Fan shaft mounted in ball bearing pillow blocks—permanently lubricated and sealed.
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- Primed with epoxy resin; finished with thermo-setting, plastic-base enamel—a triazine resin. Long-lasting, water-and-alkali-resistant.
- Safety-spiral wire guard heavily zinc-plated and Iridite-dipped for maximum corrosion resistance.
- Multiple circuiting available when specified.

Vertical air discharge LARKIN Zephyrcons, BFC-V Models, can be located anywhere regardless of prevailing winds. Noise is kept to a minimum because air discharge is skyward. Low silhouette does not detract from the general appearance of a building.

Heavy eye-bolts on all units facilitate lifting.

These units are built to take severe punishment from the elements in all climate conditions. Basic design LARKIN Zephyrcon air-cooled condensers have proved successful in thousands of installations throughout the world.

Write for Bulletin BFC 61, or see your wholesaler

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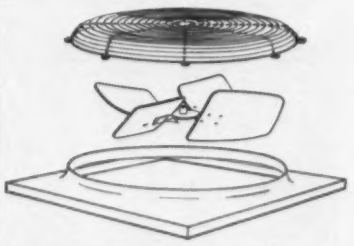

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Ventco, Inc.

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HOUSTON 4, TEXAS

my grandfather, who is 105, is getting married again."

"Do you mean to say that your grandfather at 105 years old wants to get married again," queried the doctor. "Oh, no!" came the reply. "It's not a case of wanting to—I am afraid he has to."

No doubt you will be resuming your travels again, so perhaps we will have the pleasure of seeing you over this side of the world soon.

A. VAN MENCE

Ohio Power Company
Newark, Ohio

Editor:

I always read "Inside Dope," and I have concluded that you are a pretty decent chap with your feet firmly to the ground.

E. F. SHAFFER

Yowie Bay, Australia

Editor:

Recently I read your letter to John Rice in "Cold Facts," and your comments regarding Australia and conditions in this land are very much appreciated. I can well imagine how you must feel about Australia, and knowing the U.S.A. as I do, it is obvious that there is a tremendous similarity both of personality and customers.

I would dearly love to get back to the States again for awhile, because I feel like you feel about Australia, and to me Uncle Sam is my second father. I had some wonderful times in the logging camps in Washington, salmon fishing in Alaska, hoboing it from Seattle to Los Angeles and back, service in American schooners and with some fine American ships.

As you know, George, Seattle is my second home town, and New York my third, and sooner or later I hope to be coming back home for a visit.

The Refrigeration Industry is still doing well in Australia, and we as distributors for Hussmann are doing very well at the moment, equipping a large number of Woolworths' Food Super Markets with Hussmann Equipment. This phase of our business should continue very active for another year at least, supplying Woolworths' expansion programme alone.

SAM HORT

Admiral Adds New 1-Hp. Room Unit

CHICAGO—A new 1-hp room air conditioner has been added by Admiral Sales Corp. to the company's 1961 appliance lines.

"The air conditioner (301-AC7) is a 7½-amp, 115-volt model with a cooling capacity of 6,600 Btu," the company said. "It has a thermostatic climate control and a lifetime polysponge filter that can be rinsed clean.

"A 'Flex-O-Mount' installation kit with accordion-type sides that permit instantaneous installation in windows from 27 to 36 in. wide is included. A kit for windows up to 44 in. wide is available optionally."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

A. J. Gilbreath Named

STAUNTON, Va.—A. J. Gilbreath has been named midwestern regional sales manager for the Westinghouse air conditioning division, it has been announced by D. R. Meckstroth, division marketing manager.

Gilbreath will be located in Chicago. He has been sales engineer in the Los Angeles office.

G-E Gets Injunction

NEW YORK CITY—Accused by General Electric Co. of violating trade agreements and damaging its goodwill and trade-mark, Landenheim Television Corp. here consented in Supreme Court to an injunction prohibiting the sale of G-E air conditioners below fair trade prices, it was reported. The injunction was approved by Justice Irving H. Saypol.

Carrier Selector Is for Designing High Induction Air Conditioning

HIGH VELOCITY air conditioning units for large central systems can be selected in seconds with this indicator, which works like a circular slide rule.

SYRACUSE, N. Y.—A circular selector that works like a slide rule has been developed by Carrier Air Conditioning Co. to help engineers select high induction air conditioning units in designing new systems.

"By turning a dial, engineers can determine in a matter of seconds the size, nozzle pressure, total capacity and cubic feet per minute of the Carrier unit needed to air condition a given space," the company said.

"Several alternate selections can be evaluated by only a slight movement of the indicator dial."

Complete instructions for using the unit selector are printed on the face of the dial. Requests for the selector should be directed to the nearest Carrier sales office for large air conditioning systems.

Cool Sr. Citizens

PHOENIX, Ariz.—Individual air conditioning will be among features of Arizona's first senior-citizen project under National Housing Act Section 231—the Shangri La, a $2 million, four-story apartment project due for completion in mid-July.

The development will have about 157 apartments, with rentals restricted to persons over 62.

HENRY VALVE CO.
CONTROLLING FLOW SINCE 1914

DEMAND IS GREAT... EVERYONE IS BUYING THESE EXTRA VALUE PRODUCTS

"DRI-VUE" Moisture-Liquid Indicators
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Actually Spells "WET" or "DRY" with element Color Variation—Largest Visible Element Area.

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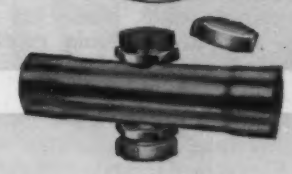
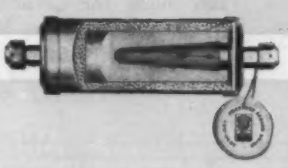
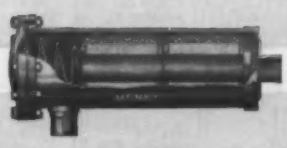


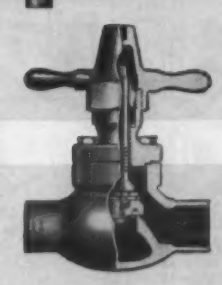
"DRI-COR" FILTER-DRIERS
Two Stage Drying; Molded Core and Granular Desiccant. Abso-dry Processed.



"DRI-COR" Cartridge DRIERS
Molded Filter Core and Granular Desiccant. Split Second Cartridge Installation.



SHUT-OFF VALVES
Packless and Packed with Flanged and Integral Connections. Wide Range of Sizes and Types.



Only Henry offers you this complete variety of types and sizes, from ¼" flare packless to 4⅛" O.D.S. packed Wing Cap valves, from 1 ton sealed type to 165 ton cartridge type filter-driers and ¼" flare single port to 2⅛" O.D.S. double port moisture indicators.

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For Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

Editorial

Are We Overdoing Dale Carnegie?

RECENTLY, a dozen heating-cooling engineers from as many companies met to discuss a controversial technical matter of interest to the entire industry. After the preliminaries, discussion got specific, and it became obvious that some forceful opinions were about to be voiced.

Suddenly, however, the committee chairman "switched on Dale Carnegie." With a few carefully chosen soft words, he quieted tempers. Taking the hint, the conferees spent the remaining two hours being polite to each other—and left the meeting without having accomplished anything.

Afterwards, the engineers were happy because there were no hard feelings. No one seemed aware, or cared, that they had prostituted their moral integrity by avoiding frank discussion of their differences. Only one objected that some 36 valuable man-hours had been utterly wasted.

It is common today to find executives who never issue a direct order, salesmen who never disagree with a prospect, no matter how wrong he is. As a nation, Americans are upset because the role of leader calls for unpopular decisions and actions; because those who depend upon the United States for their defense and succor do not also *like* us.

We wonder if we aren't overdoing Dale Carnegie a bit; if we aren't helping create emotional cripples by this unceasing preoccupation with sparing a man's feelings; if we aren't ignoring the role of reason and intellect in mankind's accomplishments.

Many readers will recall that early critics of Carnegie's "How To Win Friends and Influence People" dubbed his book "The Art of Groveling." Even giving full credit for the good the book intends and accomplishes, "Friends" is open to the charge that it puts a premium on hypocrisy, a charge vehemently denied by Carnegie's advocates.

"Criticism is futile because it puts a man on the defensive and usually makes him strive to justify himself," Carnegie says. "Criticism is dangerous because it wounds a man's precious pride, hurts his sense of importance, and arouses his resentment."

Nowhere does Carnegie acknowledge the role that effective criticism plays in spurring a man toward success. He does not mention that many of the world's greatest men, artists, scientists, politicians, businessmen, were exposed to severe, sustained, knuckle-rapping criticism for much of their careers. Resentment, sure. But the rational man overcomes resentment, evaluates the criticism, and emerges a better man.

We *owe* it to each other to criticize—so long as our own criticism is largely intellectual, not merely emotional.

"Be a good listener," is another Carnegie maxim; it's a good one. But human relationships, to be wholesome, must be reciprocal. The talker owes it to the listener to shut up for a few minutes at least!

"Always look at a controversial subject from his point of view." Fine. But there is an intellectual obligation to create for a man the opportunity to *expand* his point of view, to let in some new air, to gain a new perspective, even if this means upsetting him momentarily.

Considerateness for our fellow man must include concern for his intellectual as well as his emotional well-being. In employer-employe relationships, technical meetings, informal bull sessions, intellectual integrity should be considered as important as a man's transient feelings.

A valid respect for the dignity of each human being will prevent our unthinkingly hurting anyone. But too much emphasis on Dale Carnegie can stultify: it deprives us of the stimulation and satisfaction that attends a good argument; denies us of the maturity which can develop from absorbing and evaluating criticism; forces us, at times, to be intellectually dishonest.

Driving the money-changers from the Temple, Christ spoke forcefully: "My house shall be called the house of prayer, but you have made it a den of thieves."

Had Jesus studied under Dale Carnegie, He undoubtedly would have begun, "Now look, fellows. I understand the psychological motivation behind your greed, but — — "

Studies serve for delight, for ornament, and for ability. Their chief use for delight is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgment and disposition of business. To spend too much time in studies is sloth; to use them too much for ornament is affectation; to make judgment wholly by their rules is the humor of a scholar. . . . Studies themselves do give forth directions too much at large, except that they be bounded in by experience.—Francis Bacon.

GOT A LITTLE SOLDER, EMIL? WIFE'S PERCOLATOR SPRUNG A LEAK--- COULD YOU WELD IT FOR ME, PAL?
PROP ON MY OUTBOARD NEEDS TO BE TRUED UP--- NEED IT THIS WEEK END, BUNION, OL' BOY---HEH-HEH---MUCHO GRATIA, CHUM----
GEE--- NINE THIRTY ALREADY AND NOBODY'S ASKED ME TO DO THEIR KID'S CHEMISTRY HOMEWORK!
THERE CAN'T BE THAT MANY FREELOADERS WORKING HERE! I THINK THEY'RE COMIN' IN FROM SOME OTHER OUT-FIT----
RESEARCH AND ENGINEERING DEPT.
GOT A NEW IDEAR FOR MY BARBECUE---HOW'S ABOUT DRILLING ME A FEW QUARTER-INCH HOLES IN THIS--- I GOT IT ALL LAID OUT FOR YOU---
WONDER WHEN THE LAB BOYS HAVE TIME FOR A SILLY THING LIKE COMPANY BIZ----
THANK AND A TIP OF THE HATLO HAT TO BILL ALEXANDER, 1923 BRIARMILL RD., ATLANTA, GA.
2-6
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They'll Do It Every Time

by Jimmy Hatlo

'COMPANY OR PEOPLE?'

Holladay & Westcott, Los Angeles

Editor: We like your editorial "Are You Company or People?"

We think of ourselves as people and express this philosophy by use of business cards like the enclosed.

Ralph M. Westcott

TWO FROM LENNOX

Lennox Industries, Inc.
Syracuse, N. Y.

Editor:

Congratulations on your Trimester School Crusade. As a member of the Lennox team I am naturally interested in the air conditioning application; but in this instance even more interested as a Public School Director seeing the increasing problems at college level contributing to the fact that many deserving young people will be unable to attend college.

At the University of Pittsburgh, under the outstanding leadership of Chancellor Litchfield, the Trimester Plan is proof of an idea in action.

PAUL AGEY

ABOUT CAPITAL

Linford Air & Refrigeration Co.
Oakland, Calif.

Editor:

I was interested in the story in the March 13 issue entitled "Can't Do Big Volume on Small Capital."

As a mechanical contractor whose volume has increased many fold in seven years and whose organization has grown from one man to a reasonably large firm, we know that our growth could have been faster had more capital been available. By judicious use of bank credit, we have been successful in avoiding serious capital problems.

JOHN A. LINFORD,
President

Editor:

Congratulations on your "fresh air" editorial in the March 27 issue. As usual, you have used the words exactly right to tell a rather difficult story. This is the best comment on the importance of continuous circulation I have ever read.

I would like to reprint this story in our LENNOX NEWS and also in some other Lennox publications periodically — with credit, of course — is this OK with you?

JOHN W. NORRIS,
President

ON ARW —

Harry H. Spurdle Co., Inc.
Miami, Fla.

Editor:

We agree with paragraph 2 of Harry Alter's ARW talk, but the words *should not* should replace *cannot*.

On paragraph 3, we take strong exception. We feel that a member who has joined ARW should abide by the written code of ethics of this organization. In event the member disregards the code, then the ARW should think of its own ultimate good and request the member to dissociate himself from ARW.

Grandpaw used to word it: "Let us each clean up our own doorstep, and we'll live on a clean street."

CHARLES R. SYLVESTER,
Vice President

AIR CONDITIONING HEATING & REFRIGERATION NEWS
F. M. COCKRELL, Founder

'The Conscience of the Industry'

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Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

From the Files of the News

25 years ago . . .

Orders for air conditioning, blower fans and unit heaters during February totaled $2,611,241, a gain of nearly 13% over orders booked in January of '36, the U. S. Bureau of Census reported. This is the first year that information on air conditioning orders has been collected by an agency of the Federal government. Biggest gain shown among the air conditioning divisions was on self-contained conditioners, with February orders more than doubling January orders.

Four Philadelphia newspapers are carrying a series of institutional advertisements on air conditioning to (1) promote general interest in air conditioning, (2) to correct any erroneous concepts of what air conditioning is, (3) to reach the heads of establishments who are, or should be, thinking about air conditioning and to direct that thought to the realization that each installation is an individual engineering job, (4) to induce this group to find out more about air conditioning. In each of the Electrical Association of Philadelphia ads, air conditioning is defined as "the science of controlling the temperature, moisture, cleanliness, and motion of the air within an enclosure."

The Detroit Common Council has passed an ordinance requiring all persons engaged in the inspection, regulation, and operation of ice making, cooling, and multiple refrigeration plants be licensed and post a bond of $1,000 plus show proof of three years' experience in refrigeration installation and service. Detroit refrigeration contractors celebrated the success of their campaign for such an ordinance with a big banquet, oratory, and cheers.

George Taubeneck reported from the Mariposa—the ship which carted him from New Zealand to Australia through the humid South Seas—that the air conditioned dining room was one of the most popular places on board. "A big 15-ton Brunswick-Kroeschell direct-expansion carbon dioxide refrigerating machine pumps refrigerant up to the Carrier air conditioning unit, within which are both refrigerant and steam heating coils plus an air washing water spray and forced-draft circulation over a filter. This air is pumped to the dining room and about 25% is recirculated."

Cooling, dehumidification, and air circulation provided by three standard 3-hp units for 22,000 sq ft of mushroom beds have assured a Frankfort, Ill. mushroom industry an extra crop of mushrooms each year at a season when prices are highest. . . . Great increase seen in 1936 for air conditioning in San Antonio, with orders now in for two hospital operating rooms, a clothing store, four residences, and a hotel and drugstore completed, and more promised in the near future.

10 years ago . . .

The April 30, 1951 NEWS was a special issue devoted to air conditioning. How vital air conditioning is to America—for its defense, health, and progress—was strongly emphasized. . . . Dope said that air conditioning was essential to defense production and reminded readers of its success during World War II by (1) preventing metals from expanding and contracting, (2) helping make finely tooled parts fit exactly, (3) stepping up both the quantity and quality of production because workers and machines benefit from controlled atmosphere.

Starting May 28 Ceiling Price Regulation 22 will control prices of manufacturers of air conditioning and refrigeration equipment, heating and ventilating equipment, and many others. Ceiling will be based on the highest price prevailing during the quarter just prior to the outbreak of the Korean conflict—April 1 through June 24, 1950. . . . The Trane Co. reports a backlog of orders which directly reflect the wide range of air conditioning use, particularly for defense purposes. . . . Extensive dehumidification and refrigeration systems are preserving $25,000,000 worth of anti-aircraft guns in a constant state of readiness at an Ordnance Depot in Ohio. . . . In the Lewis Laboratory and at Wright field use of air conditioning is speeding aeronautical advances by simulating conditions met anywhere on or high above the earth.

The NEWS' editorial called air conditioning an important "secret weapon" and noted the misconception that air conditioning is a "comfort" luxury while in reality it is primarily an "industrial tool" of great magnitude. "Joe Stalin's spies missed the boat when they overlooked the importance of air conditioning."

Also noted . . . importance of air conditioning for the cooling of parachute folding rooms at the Naval Air Station in Panama . . . in the manufacture of plywood . . . for use in blast furnaces . . . added 11 hours to the working day in the paint and dope shops of a Miami aircraft and engine division . . . in producing glass with an increased capacity for bending light rays and also for producing safety glass plastic . . . also essential for the efficient assembly of television picture tubes . . . in microfilming laboratories . . . for producing chilled air to test armor piercing projectiles . . . the list is endless and constant proof that air conditioning is ESSENTIAL.

Perfection Names New Distributors

CLEVELAND — New distributors named for furnace and air conditioning lines of Perfection Div., Hupp Corp., are Pioneer Metals, Inc., Miami, Fla.; Pennbrook Supplies, Inc., Pittsburgh; and Morrison Distributing Co., St. Louis, according to Carl W. Millsom, Perfection sales vice president.

Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

Check the

CLASSIFIED ADS

Your opportunity may be there.

PENN

WATER VALVE

OUTSELLS

ALL OTHERS

ONE BIG REASON is that the Penn "246" stays on the job longer than ordinary valves. In the Penn water valve, two diaphragms keep water away from the bellows, range spring and sliding parts. Thus, water with its rust, corrosion and sedimentation never has a chance to attack these "working parts" and cause destruction. Ask your wholesaler... he'll tell you the Series 246 is the best.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Atmospheric Ion Control

What May Be Next Step In Air Conditioning Receives Attention In Scientific Circles and Public Press

By George M. Hanning

DETROIT—Atmospheric ions—whose control may be the next step in air conditioning—have received attention in both scientific circles and the public prints recently.

Three speakers at the annual meeting of the Institute of Environmental Sciences discussed the subject. *House Beautiful* carried an article on it, written by AIR ENGINEERING Editor Eugene Sloane, in February. Columnist Bob Considine commented on the European version called the Foehn.

"There is no question that atmospheric ions can have an effect on human behavior," asserted Dr. Howard G. Shutz and Richard A. Duffee of the Battelle Memorial Institute.

Further Research Needed on 3 Points

"But the amount of this effect and the ion polarity responsible for the change is not presently predictable," they told the IES meeting in Washington, D. C.

They said further research is needed to investigate.

1. The process by which ions affect the human body.
2. Conditions under which the effects occur.
3. Means by which ions may be used advantageously.

Atmospheric ions are tiny particles and gas molecules with positive or negative electrical charges.

Investigations on the effects of ions on human comfort indicate that in general, negative ions produce a pleasant feeling accompanied by relaxation and sleepiness. Positive ions generally produce an unpleasant feeling accompanied by headache, dizziness, nausea, and sore throat.

Ions, Shutz and Duffee explained, are produced in the lower atmosphere principally by naturally radioactive materials in the earth's surface or in the air and by cosmic radiation. Other naturally occurring sources include falling snow, water spray, and combustion.

Man-made sources include combustion processes, high voltage discharges, nuclear tests, and electrical equipment.

Nuclear Sub, Space Flight Lend Urgency to Subject

Shutz and Duffee pointed out that the advent of the nuclear submarine and the approach of manned space flight has put new emphasis on understanding the effects of these charged particles.

"Atmospheric conditions which are normally considered to have insignificant effects on performance, or, at most, are regarded as laboratory curiosities, may become of paramount importance in the sealed capsule environment," they said.

"For example, prolonged exposure to low levels of atmospheric contaminants may produce serious physiological changes, with an adverse effect on human performance.

"The astronaut and the submariner may be exposed to ion concentrations considerably higher than normal, and the effects of this increased ion concentration may be enhanced by other environmental factors such as acceleration stress.

"In addition, in the past decade, nuclear testing and the increasing use of high voltage electrical equipment has tended to raise the amount of ions in the atmosphere of our living and working spaces.

Business Establishments, Homes May Benefit

"Thus control of air ions may prove to be important in maintaining an optimal environment, not only in space capsules but also in our homes and business establishments," Shutz and Duffee pointed out.

Captain J. L. Kinsey of the U. S. Navy, also addressing the IES, on aerosols and air ions in nuclear powered submarines, affirmed the belief that "control of air ion concentrations will tend to lower stress and create a more comfortable and healthful atmosphere on long extended submerged cruises on nuclear

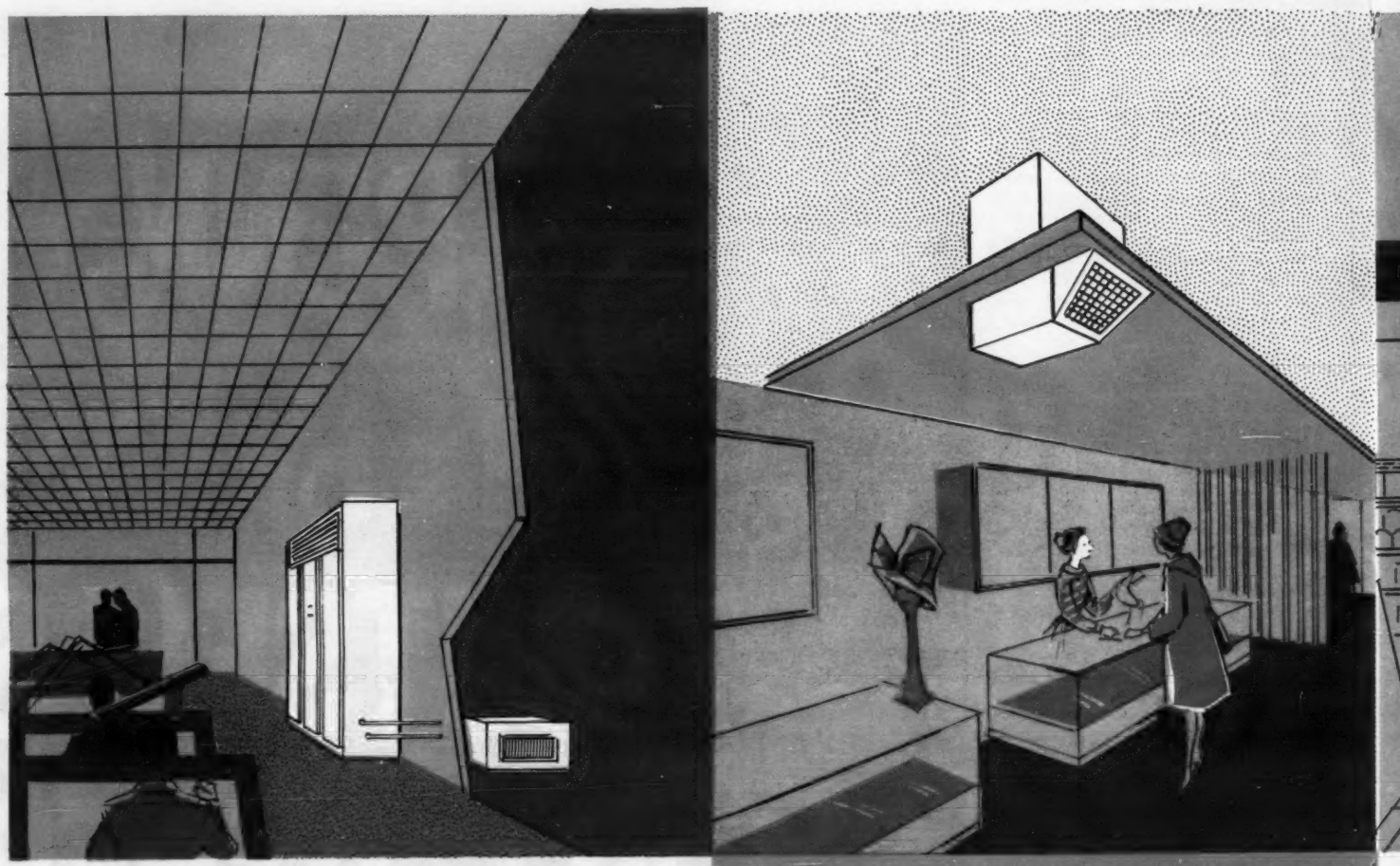
International Ionization

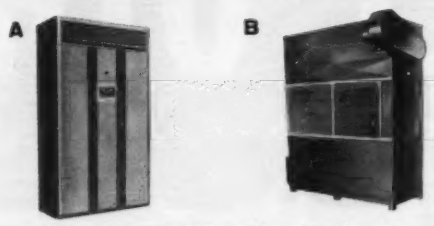
PHILADELPHIA—An international conference on ionization of air will be held Oct. 16-17 at Franklin Institute here.

The conference is being sponsored by the American Institute of Medical Climatology, a non-profit scientific association, founded in 1958 to promote the sciences of bioclimatology and biometeorology.

The technical program, now in preparation, will feature internationally recognized authorities in the field of air ionization. Topics to be covered are:

Physics of air ions; methods of producing and measuring air ions; relationship of various weather factors to natural ion levels; effect of air contaminants on ion levels; physiologi-





Water and air-cooled packaged units from 3 to 60 tons are compact, stylish and functional for in-space or remote application.

Completely wired remote air-cooled condensing unit with blower-coil units through 20 tons are ceiling-suspended or ducted to conditioned space.

"FULL CHOICE" PACKAGES—MOST

PACKAGE TYPE	POSITION	ILLUSTRATED ABOVE	NOMINAL TONNAGES										
			3	5	7½	10	15	20	25	30	40	50	60
WATER-COOLED PACKAGES (Self-Contained Systems)	IN CONDITIONED SPACE												
	Floor-Mounted Vertical	A, G	•	•	•	•	•	•	•	•			
	Ceiling-Mounted Horizontal	G	•	•									
	REMOTE LOCATION												
	Floor-Mounted Vertical	A, B, G	•	•	•	•	•	•	•	•	•	•	•
	Floor-Mounted Horizontal	B, G		•	•		•	•	•				
	Ceiling-Mounted Horizontal	G		•	•								
AIR-COOLED PACKAGES (Split Systems)	REMOTE LOCATION												
	Floor-Mounted Vertical	A, B, G	•	•	•	•	•	•	•	•	•	•	•
	Floor-Mounted Horizontal	CD	•	•	•	•	•	•					
	Ceiling-Mounted Horizontal	CD	•	•	•	•	•	•					
	Floor-Mounted Multizone	F						•	•	•			
AIR-COOLED PACKAGES (Self-Contained Systems)	REMOTE LOCATION												
	Roof-Mounted	E		•	•	•	•	•	•	•			

powered submarines."

Capt. Kinsey pointed out that aerosols—finely divided particles of solids and liquids suspended in air—are contaminants that are now being studied seriously by submarine medical officers, scientists, physicists, and engineers.

"It must be admitted that little is known concerning the physiological effect of long exposure to aerosols on personnel, but there is no question of the undesirability of these substances, especially from their irritating properties as the concentration increases, and the deleterious effect on delicate instruments and electronic installations," he said.

While noting that aerosol concentrations in submarines are not unreasonably high when compared to urban areas, Capt. Kinsey said that the fact that 80% of the aerosols in submarine atmospheres are active organic compounds as compared with 20% in urban air, makes the problem of aerosol control an important one.

He found that 75% of aerosols in submarine air are derived from cigarette smoking. Other sources include cooking, high pressure leaks from hydraulic systems, and the usual dust, lint, and other solid particles found in most atmospheres.

Method selected to reduce the aerosol concentrations is that of increasing the electrostatic precipitator capacity enough to bring aerosol levels to those of relatively clean country air.

"The number of air ions on nuclear powered submarines roughly approximates that of the atmosphere," Capt. Kinsey declared, "usually less than 1,000 per cc and averaging about 600 positive and 350 negative ions.

"This relatively low concentration, in spite of numerous ion sources, may be due to the high aerosol concentration which tends to immobilize and remove the ions," he conjectured.

"Air ion concentrations on submerged nuclear powered submarines are likely to increase with the anticipated reduction in aerosol concentrations. This implies the need for more information concerning biological effect of air ions. . . .

"It is quite possible that control of air ions may contribute to submarine habitability by increasing the general comfort of the crew and help in maintaining the emotional stability and resistance to stresses from various sources.

"Until aerosol concentrations can be reduced, it is not feasible to conduct air ion studies on nuclear powered submarines."

n Conference Oct. 16-17

cal response to air ions; psychological response to air ions; mechanisms of gaseous ion action on living matter; possible medical applications of air ions.

The final session of the conference will be a question and answer period at which time a panel consisting of the featured speakers will be available for discussion and questioning.

The program is now open to a limited number of prospective contributors. An abstract of 150 words for preliminary review by the program committee should be submitted by July 1.

Correspondence concerning the conference may be addressed to: American Institute of Medical Climatology, 1618 Allengrove St., Philadelphia 24.

'Air Engineering' Editor Gave Progress Report In 'House Beautiful'

AIR ENGINEERING Editor Sloane gave *House Beautiful* readers a progress report on the present state of research into ions.

"Negative ions number about one-third fewer in heated or air conditioned spaces than in the air outside," he pointed out. "So it seems important that we do something about ions in our homes."

He noted, too, that polluted air has a far lower negative ion count than clean air. Air pollutants absorb negative charges, neutralizing them, he said.

"We need a practical way to replace negative ions in the rooms where we live, work, and play," Sloane declared.

There are a few good units now on the market. They are used either on the room side of the outlets of air duct systems or as free-standing ionizers.

"You can't put them near the furnace or far away from the room air outlet," he explained, "because the ductwork will absorb 90% of the negative ions before they get into the room and also increase the number of positive ions."

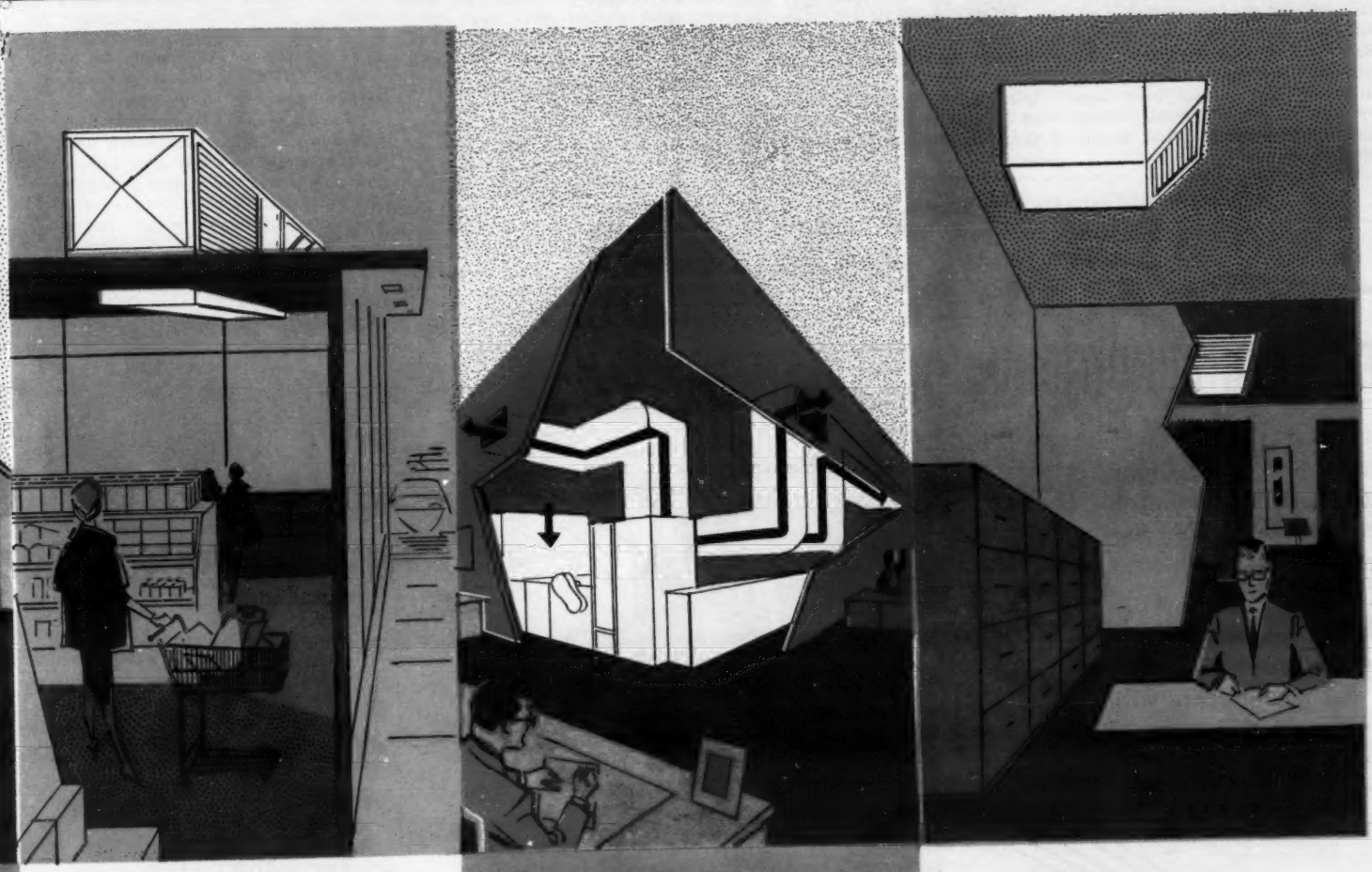
Sloane advised his readers to select an ionizer with great care, making sure that the manufacturer guarantees that the unit will not generate ozone and will put out at least 600 negative ions per cubic centimeter.

Bob Considine Reports

Columnist Considine, commenting on the Foehn wind that blows out of the Swiss Alps bringing discomfort and irritability to the inhabitants, described the Foehn as "a dandy new disease for hypochondriacs."

While not much is known about it except that it causes headaches, irritability, and a lack of concentration, it is the subject of serious study in Austria. There is a Foehn Institute at Innsbruck. Some newspapers in Bavaria and Austria, Considine said, list the degrees of Foehn in their weathercasts, ranking conditions from 0 to 2.

White collar workers feel Foehn more than manual laborers because their jobs call for more concentration, it is believed.



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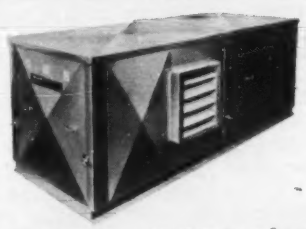


Up to 35 tons in a single package for year 'round cooling and heating—using gas, oil or steam for heating.

F

Compact, low-cost answer for true multi-zone system. Offers individual zone control from zero to one hundred per cent of system capacity.

G

Flexi-Cool units, water- or air-cooled, for ceiling suspension are completely self-contained and can circulate directly or through ducts.

COMPACT, EASIER TO INSTALL

From estimate to final installation, there's no easier line to use than Worthington "Full Choice" packaged air conditioning units. Why? For virtually every job, Worthington supplies more than one packaged system to make your work flexible, fast and profitable.

Size for size, based on nominal tonnages, the "Full Choice" line is the most compact available today. Over forty models can be designed to fit virtually any space to air condition, dehumidify and heat, too, if desired.

Units may be floor-mounted or ceiling hung, either in conditioned space or remotely. An outdoor system can be roof-mounted or located at ground level on a suitable base. Use with or without ducts—get a variety of air discharge patterns with interchangeable grills and louvers. Special units with inherent capacity control handle multi-zone or special design situations.

To make design and selection easy, Worthington has complete information on this packaged "Full Choice" line in the booklet shown. Pricing is also simple and competitive.

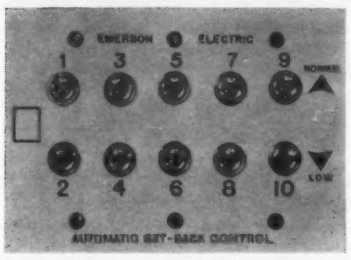
You'll find these units install for less, too. Every possible step has been done at the factory. Water-cooled units are shipped factory assembled, internal piping and wiring is complete and refrigerants charged. Air-cooled units are split systems, shipped in just two pieces. Only utilities and ductwork, if required, must be supplied.

For full information, ask your Worthington representative for the booklet shown here. Or write Worthington Corporation, Air Conditioning Division, Dept. 12-45, East Orange, N. J. In Canada, Worthington (Canada) Ltd., Brantford, Ontario.

WORTHINGTON

PRODUCTS THAT WORK FOR YOUR PROFIT

Low-Cost Automatic Set-Back Control Offered



● A new, low-cost automatic set-back control system, designed to reduce heating cost in motels, schools, churches, and residences, has been announced by Emerson Electric Mfg. Co., Dept. AH&RN, 8100 Florissant, St. Louis 36, Mo.

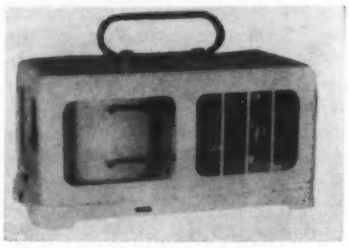
"The set-back control lowers or raises the temperature of unoccupied rooms by remote control, greatly reducing heating and power costs, saving endless steps," the company said. "With this system, you simply flick a switch at the central control panel and the thermostat in a room drops to 'low' or goes up to 'normal.' The occupant, however, in the motel unit, the classroom, etc., can still adjust the temperature at any time."

The system is specially designed to operate efficiently with all Emerson Electric electric heating units, it was stated.

Rigid Urethane Foam Sheets Introduced

● A new line of rigid urethane foam sheets has been introduced by Allied Chemical's Barrett Div., Dept. AH&RN, 40 Rector St., New York 6, N. Y.

The insulating efficiency of this closed-cell urethane is said to make it suitable for perimeters, freezers, cold-storage plants, electrically-heated and air conditioned buildings, ducts, walls, pipes, equipment, and other heat and cold retaining applications which demand lightweight, space-saving material.



Bow Small Humidity, Temperature Recorder

● A new, small temperature and humidity recorder is being marketed by Kahl Scientific Instrument Corp., Dept. AH&RN, P. O. Box 1166, El Cajon, Calif.

Although this instrument was developed for meteorology field use, it has been found useful for recording similar data in air conditioning systems, the company said.

Designated WE-24-12, the device can be furnished with 24-hr, 7-day, or 14-day clockworks, it is pointed out.

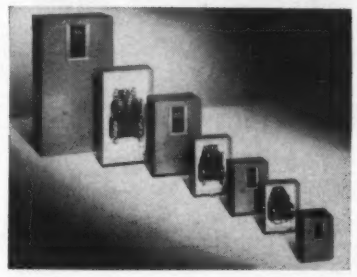
Motor Starters Designed for Critical Conditions

● A complete line of new Bulletin 709 across-the-line motor starters—"designed to meet today's more critical requirements for greater reliability, increased mechanical life, and smaller size"—has been announced by Allen-Bradley Co., Dept. AH&RN, 136 West Greenfield Ave., Milwaukee 4.

This line is offered in seven starters—Size 00 through Size 5—with maximum ratings from 1½ hp, 220 v; 2 hp, 440-550 v up through 100 hp, 220 v; 200 hp, 440-550 v.

These new starters employ the same "one moving part" solenoid principle used in the present Allen-Bradley starters. However, the design is entirely new, and both size and weight have been drastically reduced, especially in the higher ratings, the company said.

"The new Bulletin 709 starters feature double break contacts of an improved, cadmium oxide silver that resists welding," it was pointed out. "In addition, the contacts



are so shaped that they seat squarely upon closing—without wear-causing twisting or sliding.

"In the open position, the movable contacts are held in precise alignment with the stationary contacts by the movable contact support. When the coil is energized and the magnet closes, the low velocity of the contacts at closure prevents contact rebound, according to the manufacturer.

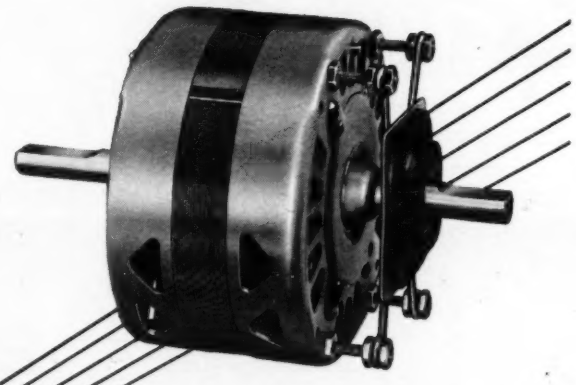
"Furthermore, the movable contact support is so constructed that as the contacts meet—and before the pole faces seat—the contacts are released. This eliminates the possibility of any side motion of the movable contact support—which may occur during pole face seating—from being transmitted to the contacts and causing unnecessary contact wear."

HIKE YOUR PROFIT LINE— WITH Redmond's

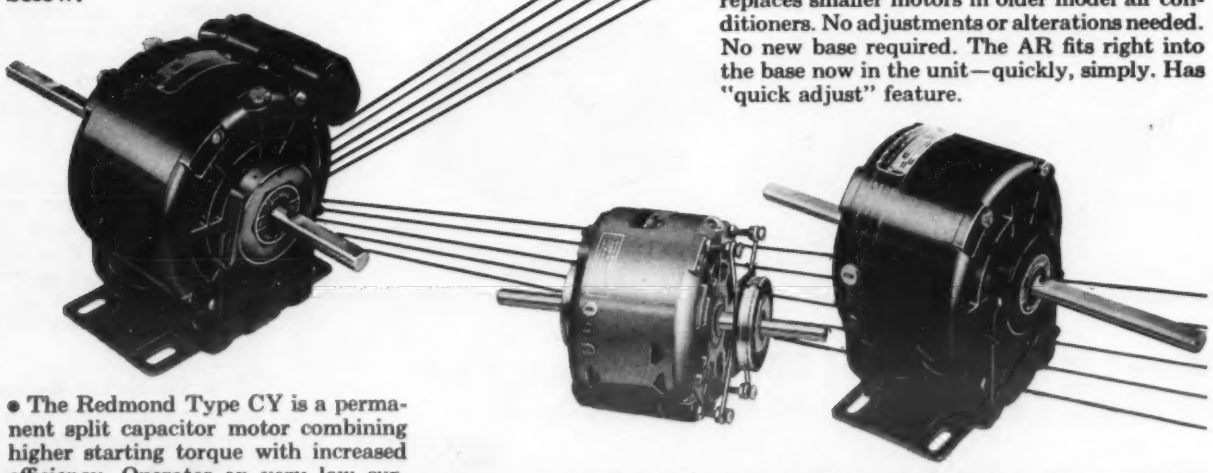
COMPLETE LINE OF AIR CONDITIONING REPLACEMENT MOTORS

Here's the most complete line of air conditioning replacement motors in the industry. Sales and service profits will really climb because these motors increase your replacement market.

They're dependable, quiet, fool-proof—and they'll meet all of your requirements for replacing motors in room air conditioners with from 1/3 to 3-ton capacities. A full range of bases is available for base-mounted motors. For complete details on these easy-to-sell, simple-to-install motors, send for the free folder shown below.



● Redmond's new Type AR shaded pole motor replaces smaller motors in older model air conditioners. No adjustments or alterations needed. No new base required. The AR fits right into the base now in the unit—quickly, simply. Has "quick adjust" feature.



● The Redmond Type CY is a permanent split capacitor motor combining higher starting torque with increased efficiency. Operates on very low current, hence is cooler-running, more economical. Is totally enclosed for protection against high humidity.

● The AY by Redmond is available both as a base-mounted motor and with a "quick adjust" feature. Each type has drip-proof stator, with top half of motor enclosed, to guard against moisture. Easy to install because you just mount it in and plug in the leads. No wires to get in your way. Adjustable end mounted motors require only two simple adjustments to fit into most bases.

DISTRIBUTORS DIVISION

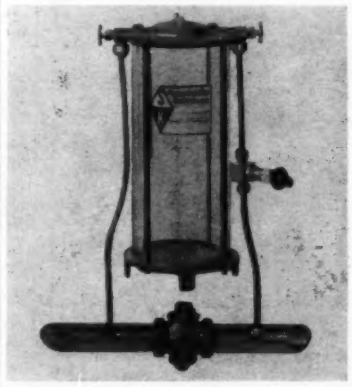
Send For FREE FOLDER containing complete information on Redmond's money-making line-up of replacement motors for room air conditioners. Ask for "PROFITS FROM REDMOND."

The Standard of Dependability

Redmond Company, Inc. OWOSSO, MICHIGAN

Subsidiary of

COOKSVILLE, ONTARIO • CONTROLS COMPANY OF AMERICA • ZUG, SWITZERLAND



Automatic Dispenser For Water Conditioner

● A completely new automatic dispenser — K-1200 — to treat approximately 500,000 gals. of water with one filling of Karlsonite water conditioner is now available, according to Stiles-Karlsonite Corp., Dept. AH&RN, Waukegan, Ill.

"Karlsonite, a water soluble, complex phosphate, non-toxic water conditioner suspends and inactivates elements in water that prove harmful and damaging to commercial and industrial equipment," it was noted. "Designed primarily for the large industrial plant to reduce the frequency of re-filling the dispenser, the K-1200 automatic dispenser has a 12-lb capacity, and will treat water at the rate of 40,000 to 50,000 gals. per pound of Karlsonite water conditioner.

"The K-1200 automatic dispenser includes a new special tempered see-through Pyrex cylinder to withstand extreme temperatures and pressures. The dispenser housing is constructed of 85-5-5-5 bronze. A built-in venturi feed and an instrument-type metering valve for close tolerance adjustment are new design features of the K-1200 dispenser."

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.

Tell him: "AH&RN sent me!"

Window Coating Reduces Sun's Glare, Heat

● "Sun-Chek," a permanent, transparent coating flowed onto glass to reduce glare and heat from the sun, is being offered by Sun-Chek Co., Dept. AH&RN, 166 Saratoga Ave., Los Gatos, Calif.

Coatings come in a variety of colors including clear and frosted shares. Engineering studies show that Sun-Chek can bring a savings in initial air conditioning cost and in operating cost, according to the company.

"When applied to existing windows, Sun-Chek coatings last indefinitely and are guaranteed in writing not to chip, crack, or peel," the company said.

"Since Sun-Chek treated glass absorbs and eliminates up to 100% of the ultra-violet rays of the sun —which cause fading of colors and deterioration of materials—it is especially suitable for application of store windows."

'Duo-Test Sealer' Now In Squeeze Bottle

● Introduction of its "Duo-Test" sealer in plastic squeeze bottle has been announced by Madden Brass Products Co. Dept. AH&RN, Aurora, Ill.

"Available in 4-oz. and 2-oz. sizes, the convenient new bottles are easier and cleaner to use," the company said.

"Duo-Test thread and pipe sealer makes a permanent, leak-proof, flexible seal that lasts until taken apart. Used without thinning, Madden sealer is insoluble in refrigerant, L-P gas, gasoline, oils, kerosene, and chlorinated hydrocarbons."

Kit Tests Voltage, Amperage, Resistance

● A new, low-cost testing kit which includes a new snap-around instrument that features voltages, amperage, and resistance has been announced by Pyramid Instrument Corp., maker of "Amprobe" test instruments, Dept. AH&RN, 630 Merrick Rd., Lynbrook, L. I., N. Y.

The complete kit, of which the new instrument is one element, is called the "Amprobe Junior Testmaster." The new snap-around tester itself measures current without interrupting service (the jaws snap around the conductor), tests voltage on a calibrated scale, and also measures resistance, it was stated.

The instrument can be used for estimating, installing, trouble-shooting, and maintenance of all type of electrical appliances, according to Pyramid.

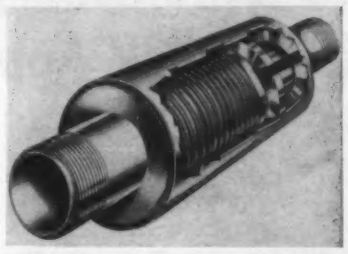
"Ruggedly constructed and completely insulated, the new Amprobe Junior is pocket-sized for one-hand operation (it measures only 4¾ in. high and weighs 11 oz.)," the company said. "The entire Amprobe Junior Testmaster kit consists of the instrument itself, an ohmmeter battery attachment, two safety-type leads, the Amprobe Energizer (splits double-conductor cords for readings at the outlet, or boosts the sensitivity of the Amprobe Junior ten times for testing fractional horsepower motors), and a cowhide leather carrying case."

Six different models are available; from 0-25 to 0-100 amps; either 0-125/250 or 0/150/600 volts a.c.; and an ohmmeter scale with a mid-range reading of 25 ohms. The complete kit lists for $29.85 (slightly higher in Canada).

Aluminum Grilles

● A new line of all-extruded aluminum grilles furnished with an architecturally etched finish is being offered by General Air Products Corp., Dept. AH&RN, Stirling, N. J.

Expansion Compensator Is of Stainless Steel



● The original Flexonics model H expansion compensator, designed to absorb thermal growth in pipes up to 3 in., is now available as model HS, manufactured entirely of corrosion-resistant stainless steel, according to Flexonics, Div. of Calumet & Hecla, Inc., Dept. AH&RN, Bartlett, Ill.

"Screwed, welding, or flanged ends; heavy-duty 2-ply Flexonics bellows; positive anti-torque mechanism; and protective shroud are all of stainless steel," it was pointed out. "This permits use of this low-cost device under corrosive conditions, at working pressures up to 175 psi, temperatures up to 750°F. The unit is manufactured in pipe sizes ¾ to 3 in.

"Also newly available is the Flexonics all-bronze expansion compensator, primarily for applications where the use of dissimilar metals might cause corrosion.

Flexible Rubber Pipe Is for Heating, Cooling

● A new flexible rubber pipe, designated "Soundzorber 'HT'," for use on piping installations having a temperature operating range up to 250°F has been developed by General Rubber Corp., Dept. AH&RN, 67 Summit St., Tenafly, N. J.

It is said to be particularly useful on dual hot and cold water circulating systems. Soundzorber "HT" employs Neoprene throughout and uses heat-resistant Dacron in the place of cotton duck, the company said.

KEEP IT CLEAN!

VAPCO-PHOS NUGGETS

For complete protection against recurrence of scale, rust, corrosion, algae and slime. Nuggets dissolve uniformly and slowly for long-term protection. Apply by hanging in spray, submerging in sump, or through a feeder. Plastic feeder bags supplied with 3 and 10 lb. cans. 50 and 100 lb. drums also available.

VAPCO-SLIME-X

For positive control of algae and slime. Harmless to wood or other parts of system. 10 ounce cans and 25 pound drums.

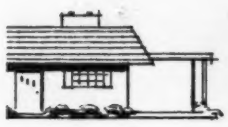
Vapco QUALITY PRODUCTS

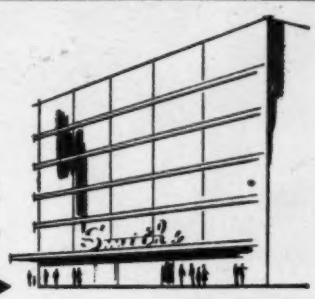
Complete literature on request or see your dealer TODAY!

CARMAN COMPANY
ST. LOUIS 25, MO.

See how you profit because of the

Lennox WIDE RANGE

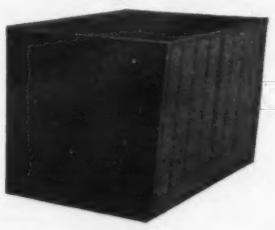




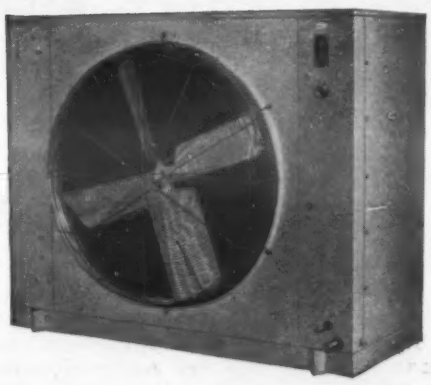
Full line of heating and air conditioning units... for every type and size installation

EXAMPLE

One Lennox series of air-cooled condensing units (HSA2) comes in 1½, 2, 3, 4, 5, 7, 11, 17 and 25 ton capacities.



2-TON



17-TON

Featuring:

- Extremely high Btuh cooling per watt of power used because these units sub-cool refrigerant as much as 20° lower than condensing temperature.
- Low air resistance and low power costs because of huge coil, straight through air travel and exclusive Power Prop air mover. Quiet.
- Exclusive bonding of fins and tubes gives additional efficiency. Each coil is tested at 400 psi under water. Cabinets are acoustically lined; treated to fight corrosion.

The Lennox dealer is not confined to a short line—and he doesn't have to handle two or three brands in order to get *quality* equipment for all his needs.

What does this mean to you as a dealer? First, it simplifies many of your business problems. It also helps you build a stronger "image" in your community. Even more importantly, it enables you to compete on the bigger heating and air conditioning jobs (with factory field men to assist you).

The Lennox line includes gas, electric, coal and oil heating systems, heat pumps, dual-fuel industrial heaters to 2,000,000 Btuh—and whisper-quiet air conditioning units up to 25 ton size.

So if this is your year of decision—the time to make the big change for your big future—you'll find the profit signs all point to Lennox. Get the complete story—without obligation. Write your nearest Lennox factory or Lennox, 406 S. 12th Ave., Marshalltown, Iowa.

Don't be satisfied with less than

LENNOX

HEATS, COOLS, TREATS AND MOVES AIR

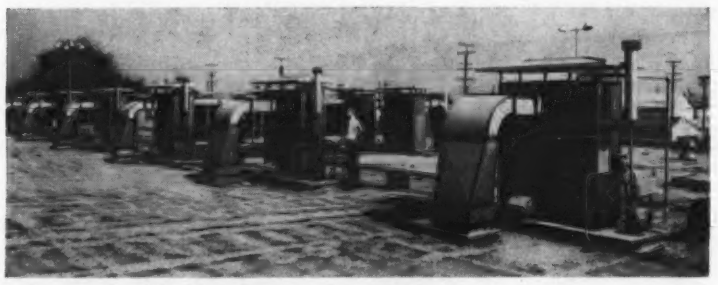
LENNOX Industries Inc., est. 1895—Marshalltown, Des Moines, Ia.; Columbus, O.; Syracuse, N.Y.; Decatur, Ga.; Ft. Worth, Tex.; Salt Lake City, Utah; Los Angeles, Calif. LENNOX Industries (Canada) Ltd.—Toronto, Montreal, Calgary, Vancouver, Winnipeg

Pioneer Bowl Air Conditioning System Puts Coolest Air In Alley Approach Area

SPECTATOR AREA at Pioneer Bowl has air conditioning registers over bowling area and air returns behind spectator seats, resulting in steady air flow pattern.

LOS ANGELES—A reportedly unique air distribution system which circulates conditioned air through the alley approach area, and used in conjunction with 14 individual gas air conditioning units, is being used by a bowling alley here.

At the 32-lane "Pioneer Bowl" in suburban Norwalk, air registers are placed directly over the alley approach area so that bowlers have the freshest air in the house as they bowl. In addition, air returns are positioned behind spectator seating, causing fresh air to move first over the approach area and then through spectator areas.



THESE 5-TON ARKLA gas absorption units provide 70 tons of cooling, as well as heating and other air conditioning, for the Pioneer Bowl. This installation employs air flow pattern which directs coolest air over bowling approaches where it is needed most, and also draws smoke and other pollutants away from the bowling area.

"This design innovation not only provides coolest area where it's needed most, but also draws smoke and other pollutants away from the bowling area," according to owners Joe Loucostic and Joe Rose. The 70-ton gas system is believed to be the first bowling center installation of its kind in this part of the country.

Year-round air conditioning is provided by 14 "Arkla-Servel Sun Valley" (model 750) 5-ton absorption gas cooling and heating units located on the roof of the building. Loucostic and Rose said installation costs were held at a minimum because only one register was required per Arkla unit and the contractor was able to take advantage of quantity buying of registers and other identical components.

The Arkla gas units also provide air conditioning for the rest of the bowling alley-recreation center, which includes a game room and nursery for children, a coffee shop that seats 60, and a bar and dining-banquet area accommodating about 150 persons.

The center is decorated in a western motif with table and counter tops and carpeting finished in a unique steer head cattle brand pattern.

She's sweating out a scale problem

It figures—twenty women in her shop—the hottest day this summer—and the air conditioning quit. No wonder she's perspiring . . . and imagine what her customers are saying.

Scale in the cooling water system caused the shutdown. While outdoor temperatures were moderate, the system operated fairly well. But an extra ten degrees was too much.

You can keep *your* customers from getting into this kind of a pickle. First make sure the system is clean—by using Calgon® Scale Remover. Safe and easy to use, this famous Calgon product has built-in inhibitors and wetting agents. A color indicator tells you when the solution is right and when the job is done.

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Past Presidents Honored by Detroit ASHRAE

DETROIT — Past presidents of parent societies of the present Detroit chapter of American Society of Heating, Refrigerating & Air-Conditioning Engineers were honored recently. Seated at a separate, flower-bedecked table, wearing carnations supplied for the occasion, past presidents from as far back as 1922 recalled briefly the early struggles for society existence.

W. T. Harms, president of the old ventilating group in 1922, reminisced about the time when "We had no regular meeting place. The dozen or so there were of us found a different place for each meeting—the deciding factor being how cheap the meals were."

Other past presidents of the original heating and ventilating society were N. W. Calvert, whose term ended in 1928; W. G. Boales, 1930; E. E. Dubry, 1931; G. H. Giguere, 1932; L. L. McConachie, 1933; H. E. Paetz, 1934; Glen Winans, 1935; A. Wallich, 1936; F. J. Linsenmeyer, 1939; G. H. Tuttle, 1941; W. H. Old, 1945; L. A. Burch, 1950; George Akers, 1952; Ed Glanz, 1955; Dave Falk, 1956; James Livermore, 1957; Paul Hosman, 1958; K. E. Wagoner, 1959; and Joe Olivieri, 1960.

Past presidents of the former ASRE were Hugh Keeler, 1936; E. P. Kellie, who served two terms ending in 1945; G. H. Poggen, 1947; Hugh Scullen, 1950; J. C. Rehard, 1952; Dave Falk, 1953; Ray Burns, 1955; Stan Janczarek, 1956; Emmanuel Feinberg, 1958; Ray Lee, 1960.

TECH CENTER

by
FRANK J. VERSAGI

Electric Utilities and Air Conditioning

The last two Tech Center discussions dealt with the role of gas utilities in promoting gas air conditioning. Fundamental to the competition between gas and electric utilities is recognition of the fact that the fuel which gets the heating and cooling load is almost sure to get the rest of the appliances in a house.

Electric utilities, which may or may not be aggressive in pushing heat pumps, electric air conditioning, and electric heat, nevertheless know that they are in a gigantic struggle with an alert, aggressive competitor. So, most times that electric utility personnel gather, the discussion inevitably gets around to what the power companies can or should do to increase their share of the market.

Without fail, the problem of supplying service comes up. Should an electric utility supply service on electrical equipment and appliances?

Here are some direct quotations from a utility meeting.

Servicing

"We take the position that the servicing of appliances is not our responsibility. Our future position in this matter will depend on developments."

"Yes, the utility has an obligation and can greatly assist the customer to obtain service by working with the distributors and the independent service organizations."

"I don't believe the utility has the responsibility or the obligation to service."

"The utility does have a responsibility to the customer as well as to itself. Broken down equipment does not add load to the company's lines."

"The utility has no direct responsibility for servicing appliances as such, but in the interest of good customer relations. . . ."

There is no doubt that the electric utilities would prefer that the distributors and dealers supply adequate service. In the case of something new like heat pumps, though, the power people will do more than usual in this regard to get the load on their lines.

Running counter to this is the reluctance of utilities to service refrigerators and freezers "because of the unit exchange problem." Some electric people equate refrigerator and freezer servicing to radio and television servicing, which they avoid like the plague.

Selling

Recognizing, however, that "the key to the solution of our problem is the all-electric home, including electric heating and air conditioning," power companies seem almost unanimous in agreeing that they should be active in *selling* most types of power-consuming devices and equipment.

"An all-gas home with gas space heating, gas water heating, gas refrigeration, gas cooking is worth only about 1,500 kwh a year to the electric utility," estimates one authority. "The total electric home with electric space heating, air conditioning, refrigeration, cooking is worth about 23,000 kwh per year."

Converting to dollars, the all-gas home may bring an electric utility $49.68 per year; the all electric residence produces $375.

Power companies are coming to agree, then, that the climate control concept is the key to future load building for either kind of utility.

"We must get heating and cooling as the BASE load. Let's quit thinking of it as a side effect, and the other appliances will follow," emphasizes a power company executive.

Some go further and apply the same reasoning to commercial applications, as well as residential.

Wiring

At the residential level, however, the electric utilities encounter a serious obstacle in attempting to push for more load. Admittedly, the best potential for immediate growth in the home market is from greater use of 230-volt appliances. While it may not be true of central air conditioning and heating, the point is that the cost of wiring for some of these appliances can exceed the cost of the appliance.

"This is especially true in existing homes and in apartments," cites C. M. Wallace, Jr., of Georgia Power Co.

"I know of nothing that hurts our progress more than a statement by a gas or oil salesman that the purchase of his fuel and related appliances will eliminate the need for a very costly re-wiring job. It is almost like having a door slammed in your face," states William C. Wenner of Northwestern Rural Electric Cooperative Assn.

This cooperative has gone so far as subsidizing new service entrances, a step which most utilities still frown upon, although they realize the block that insufficient wiring poses to their expansion dreams.

Northwestern Rural requires that the customer pay a deposit and inspection fee before installation of the service entrance. "When the new entrance has been inspected and approved, we immediately refund the deposit; the money usually goes to the electrician and helps him get prompt payment for his services."

Georgia Power advertises, "To help you live better electrically, Georgia Power Co. will pay 50 dollars - 70 -100 -200 dollars toward the installation of adequate service entrance facilities for new and existing homes and apartments." The plan calls for company ownership of part of the new wiring —outside wire to the house, insulators, service entrance cable or conduit and wires, meter and meter socket, and the service entrance box or disconnect. Customer would own and maintain breakers, fuses and fuse pullout blocks.

When one considers that new service entrances can average one dollar per amp, and that several hundred dollars more may be spent for interior wiring, it is easy to see why some utilities are concerned over the problem of adequate wiring.

Healthy Fight

This growing battle of the fuels, between the gas and electric utilities, has led to some questionable promotional efforts, most will agree. Yet, the fight for the fuel market is probably the healthiest manifestation of economic competition left in our country. Both groups are pouring money, manpower, and materials into the fight; salesmen are being joined by engineers and servicemen and billing clerks as each company attempts to mobilize its entire working population for the struggle.

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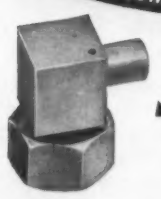

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⅝	⅝
¾	¾
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Conference Told

Variety of Causes Gives Rise to Problems In Operating Air Force Heating Plants

DAYTON — Problems faced by the U. S. Air Force in operating and maintaining central heating plants stem from such causes as variety and newness of designs, limited personnel, limited funds, and policies on fuels, according to Maynard A. Rauch of Headquarters, Air Defense Command.

These were reviewed by Rauch at the recent Heating and Power Conference staged by Hq, U. S. Air Force at Wright-Patterson Air Force Base here.

It was pointed out by Rauch, for example, that major new facilities for the Air Force are provided by the Corps of Engineers, which engages local architect-engineer firms to design facilities within given geographic areas.

"Since similar facilities are designed by many different engineers, the configuration of plant arrangement and controls will be proportional to the number of A-E firms retained," Rauch declared. "This behooves that the personnel engaged in operating the plants be very versatile and possess the ability to resolve the operation for compatibility with the design.

"The concept as to how the plant should be operated will also be proportional to the number of operators employed. The plant operators, being trained in a specific technique of operation, or specific type of system, may not be compatible with a new plant without receiving additional training.

Reassignment of Operators Costly

"Many times when operators are reassigned to plants of a type unfamiliar to them, operational difficulties begin. When the operational difficulties begin, the operators do not hesitate to perform alterations and modifications which they think will bring the plant closer to being compatible with their assumed method of operation.

"Many times these changes may cost the Air Force large sums of money and, in addition, aggravate the operational difficulties and decrease the operating efficiency," Rauch said.

"It has been found that a detailed description as to how a system should function is most valuable to the plant operators. Line diagrams which show the general arrangement of equipment and piping with valve and flow designation will present a condensed picture of his system. However, without a description of operation, in conformity with design concept, there is still a loophole for operators' imagination and possible malfunctions," he declared.

"Construction contracts, generally, require the contractor, or his representative, to provide training in operating equipment installed. The intent of these provisions by the designing engineer, is for a service which will familiarize the plant operators with peculiarities.

"However, when the plant is undergoing the shakedown test, these provisions are construed by the contractor as applying to operation of a specific piece of machinery. Consequently, the instructions as to peculiarities of the system, in relation to the design concept, are omitted."

Nuclear Reactors, etc. Offer Special Problems

"With the advent of new plant innovations, such as high-temperature water, nuclear reactors, etc., specially trained instructors are a must. The mechanics familiar with installing steam plants are not conversant with the theory of operating these newer plants. During shake-down operation, the contractors rely on these mechanics to operate the plants of newer concept.

"On several occasions, it was very fortunate that severe damage did not occur when the wrong sequence of operating valves and equipment was demonstrated. On one specific case, after inquiring with the mechanics selected to accomplish a shake-down operation, it was felt that their knowledge of operating steam plants did not familiarize them with the peculiarities of high temperature water.

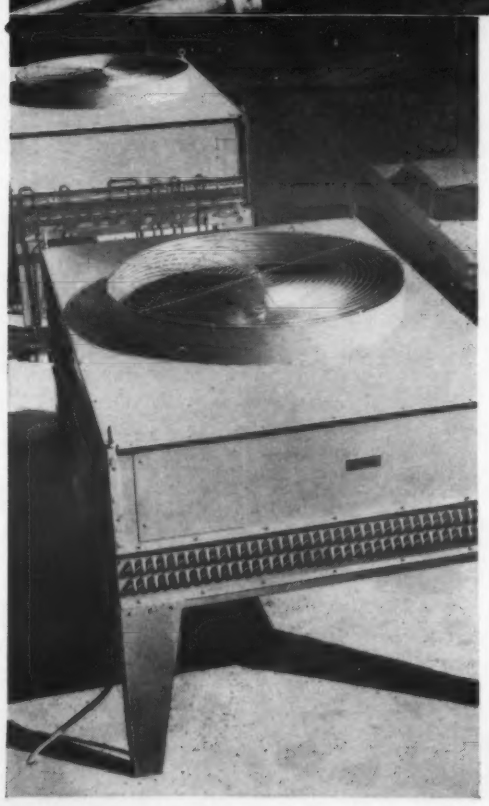
"However, the contractor insisted that his mechanics could operate the plant. Since he was still responsible for the plant, the shake-down test was begun. Very shortly, their lack of knowledge in this new field was apparent when the safety signals and alarms indicated trouble. The cause was that someone had opened a wrong valve causing a drop in pressure below the pressure corresponding with the saturated temperature of the water.

"The combination flow of steam and water throughout the system caused considerable water hammer whose force could have ruptured the pipe and equipment. Even though the operation was embarrassing to the contractor, the results, to the AF personnel, were a valuable demonstration of improper operation which they will long remember," Rauch commented.

Expansion Accompanied By Manpower Shortage Compounds Problem

"Expansion of Air Force activities, by erecting new installations, at the same time that attempts are being made to curtail recruitment of personnel, has increased the problems of economic operation. When manpower allotments cannot keep up with the workload, the alternative is to indulge into contractual operation.

"This procedure has created a requirement for industry to expand into the field of plant operation; consequently many new companies have come into existence to cope with the demand. They, too, were confronted with many problems in recruiting personnel, especially since the duration of such contracts, or employment, might be for a short duration.



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"Generally, where such contractual operation was based on competitive lump sum bids, for a short period of operation, difficulties were experienced in obtaining the results as defined in the contract.

"Hq USAF, after a Congressional inquiry challenging the feasibility of changing from contract operation to in-service operation in two high temperature water heating plants, directed a cost accounting system be established for each plant. The results proved definitely that in-service operation could be accomplished at a considerable saving to the government. In addition, the operational surveillance by the Base Civil Engineer was more effective," he said.

Precautions Needed with High Temperature Water Systems

"High temperature water systems have many advantages as compared to high pressure steam. However, some noteworthy precautions are in order. When leaks occur in a steam system, the leak is evident by the visible vapor escaping through the leak. With small leaks in high temperature water system, there is very little visible vapor available. In a quiet environment, a hissing sound may be detected. In a heating plant, the noise level is high enough that many leaks may go undetected," he explained.

"The large reserve of heat energy available in the high temperature water heat exchange equipment has presented a problem in controlling the temperatures within the secondary systems. When the water flow in the secondary system, through the heat exchanger, is modulated down to the no-flow point, the tremendous heat energy within the primary water causes the temperature of the water in the secondary system to rise very rapidly, resulting in excessive hunting of controls. Increasing the secondary system water capacity, within the exchanger, may resolve this difficulty," Rauch suggested.

Freeze-ups In Steam Coils

"Many systems employ the use of 100% outdoor air for supplementing the building air which is mechanically exhausted. Such systems are provided for kitchens, paint booths, toxic fume area, etc. In subfreezing areas, much difficulty has been experienced with coil freeze-ups.

"Freeze-ups in steam coils can be attributed to improperly drained coils, due either to modulating steam supply or insufficient elevation between coil outlet and inlet to traps. Providing a 'hot' coil with uncontrolled steam supply during freezing weather may not always be the solution. Rapid condensing of the steam within the coil may create a reduced pressure between coil and trap whereby the water will not drain through the trap, resulting in freeze-up of coil.

"Proper drainage through the trap can be assured by providing adequate elevation of coil above the trap. A pressure gauge in the outlet of coil will enable the operator to observe that sufficient pressure is available to push the condensate through the trap. With a hot coil, temperature control for air discharge is maintained by modulating a face damper over the coil in conjunction with a damper in the air duct bypassing the coil," he said.

"Another method of freeze protection was attempted by installing a system that would employ hot water which contained an ethylene glycol solution. This method also has its operating difficulties, such as: maintaining proper proportion of glycol to water ratio, proper anti-corrosive inhibitor to neutralize chemical reaction and protection against contaminating potable water supply. In addition, many superfluous auxiliary components are required when converting steam to water.

"In boiler plants, outdoor air is needed to supply the air required in the boilers for the combustion of fuel. The fact must be recognized that supplementary heat must be supplied into the boiler plant to maintain a comfortable temperature for the operators. Generally, it is assumed that doors and windows can be opened and the unit heater can supply the Btu to meet the heat loss calculations.

"This method creates a drafty, cold, and uncomfortable working condition. Consequently, the operators close off the outdoor air supply and starve the boilers of vitally needed air for efficient combustion. Providing heating coils in the combustion air intake is not entirely satisfactory, especially when excessive friction loss is created through the coil, causing the unheated air to be sucked through cracks in windows, doors, etc.

"The excessive negative pressure can create a hazardous condition when products of combustion are sucked into the building through idle boilers or barometric dampers.

"The only reliable solution to overcome this neglected problem is to provide air handling units which will provide a positive pressure within the boiler plant through the introduction of 100% outdoor air. The same freeze-up precautions, as explained above, will be required," Rauch declared.

"When designs for central heating plants included the enclosed overhead bunkers, operational difficulties, such as: bunker fires, dripping water, etc., were considered hardships. Those problems may be considered of a minor nature in comparison to the operational difficulties experienced with exterior coal silos, chutes, elevators, etc.

"A noteworthy statement made, on many occasions, by our former chief of heating plants in Hq, USAF, regarding silos in northern areas, expresses the sentiment of many plant operators: 'They make the best safety deposit vault for coal.' One thing sure, if attempts are made during freezing weather to handle the gradation of coal required for efficient combustion, the coal will remain in the silo in one solid-frozen mass," Rauch said.

"Once a facility is erected, regardless of the extreme operational difficulties encountered, the chances of obtaining funds to correct these deficiencies is very doubtful.

"In self-defense, to keep the plants operational, premium quality coal is purchased for use during freezing weather. The premium paid for this better grade of coal along with greater operational cost would pay for a bunker system in a very few years," he suggested.

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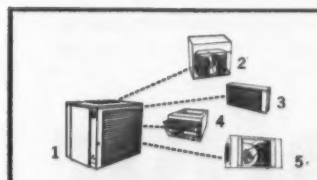

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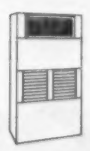

3 or 5 Ton Water Cooled Units

2, 3, 4 or 5 Ton Year 'Round Units

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Cap Tube Systems

By Henry Ehrens, President,
Sealed Unit Parts Co., Inc., New York City

Author of this series has had many years of experience with hermetic systems doing wholesale repair work as well as wholesale rebuilding of motor-compressor units in addition to manufacturing replacement parts and specialty items for the trade.—Ed.

Part 2

Before I get too far ahead with the critical aspects of the cap tube, let me explain some of my remarks. When the engineers design a cap tube, the pressure drop and flow rate must match the pumping capacity of the compressor.

You can easily see what would happen if they didn't balance. If there was too much flow through the tube, the compressor would have to pump like the dickens to bring the suction pressure down, and if there wasn't enough flow, you would starve the evaporator and build up in the condenser.

What I'm trying to emphasize is the importance of the flow rate, which is in relation to the bore and length of the tube. Naturally, we must admit that the length cannot change by itself, and the bore cannot get larger, so all that can ever happen to the cap tube is that it can either become plugged up completely or partially restricted.

How Does It Get Partially Restricted?

How does a cap tube become partially restricted? In the process of manufacturing, a certain percentage of cap tube systems are sent into the field containing a tiny amount of chemicals, either acid or alkali by nature. As careful as all manufacturers are, it is impossible, in the practical sense, to have 100% of their production completely free of all contamination.

This contamination, through a period of years, works on the various metals, and microscopic particles are formed. These particles circulate in the system, passing through the strainer easily, and some cling to the wall of the cap tube. Heavy or larger particles caused by a partial breakdown of the motor winding insulation will be trapped by the strainer.

When excessive loads are put on the system either through very high ambients or clogged condensers or defective fan motors, the excessive heat will accelerate the breakdown process and the cap tube will become more and more restricted in a shorter period of time.

So you can easily see how a cap tube can become partially restricted even though no one has touched the system for years.

Will Go Unnoticed For Considerable Time

You know, when the partial restriction first occurs, no one realizes it. In a domestic refrigerator or freezer it would go unnoticed until someone in the household realized that the running time had increased and the off time lessened. In a commercial application the increased running time would probably never be noticed.

To those who never realized what takes place in a cap tube system my next statement will come as a surprise. On most domestic refrigerators the first complaint resulting from a slightly restricted cap tube will be that the food freezes or that the box is too cold even when the thermostat is on a warm setting. Naturally, the running time of the unit has also been increased.

This too cold condition occurs when the thermostat bulb is located near the return or outlet of the evaporator. Instead of the bulb being in contact where the liquid level would normally be, the bulb has to depend strictly upon conduction through the metal from the point where the liquid level might be, 2 or 3 in. away from the bulb. The restriction has starved the evaporator so much that the liquid level is away from the bulb location. The rest of the evaporator will have to pull way down to reach the cut-out point of the bulb.

Rolling Snowball Type of Problem

The increased running time and shortened off time raises the average operating temperature of the hermetic compressor, and this increase in temperature is transferred to the condenser. The condenser, though, is already overloaded because the partial restriction has caused the liquid to back up on a few of the bottom tubes.

So here you have the makings of a rolling snowball. From a slight and probably unnoticed restriction, a slight overload occurs. The overload increases with the operating time and, unless checked, will eventually burn out the unit.

(To Be Continued)

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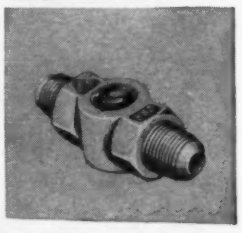

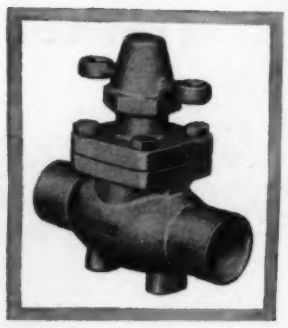

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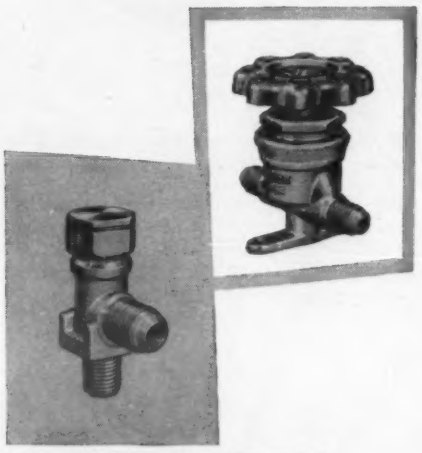

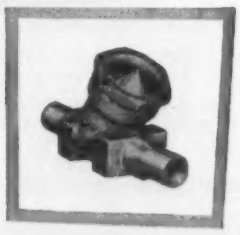

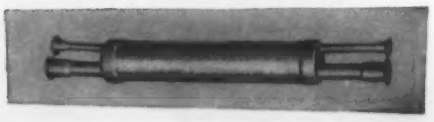

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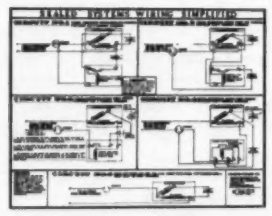

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Current Literature

Fan Performance Charts

LOS ANGELES — Recold Corp., 7250 E. Slauson Ave., Los Angeles 22, Calif., has announced revised and expanded fan performance charts for all standard sizes of Recold air handling, multizone, and heating-ventilating units.

The charts (Catalog 50C1a) plot performance of forward and backward curved fans for ½-in. through 6-in. static pressure in the range of 400 to 800 fpm.

'Polarstream' Process

NEW YORK CITY—A four-page folder describing Linde's "Polarstream" process—an in-transit refrigeration system for perishable and frozen foods—is now available from Linde Co., division of Union Carbide Corp., 270 Park Ave., New York 17, N. Y.

The sales folder explains how the Polarstream system automatically maintains any preselected temperature from ambient to -320°F with liquid nitrogen as the only refrigerant. Advantages of the system are also cited.

Hydronic Guide

JOHNSTOWN, Pa. — A new edition of the Hydronic Fitters' Guide is now available to contractors and wholesalers of hydronic heating equipment from Crane Co., P.O. Box 780, Johnstown, Pa.

This pocket folder gives hydronic contractors simplified step-by-step instructions for determining room-by-room residential heat loss, sizing the boiler, and selecting the radiation, it was stated. A typical example is presented to aid in understanding the method, which is based on current I-B-R Guides and Manuals.

Replacement Motors

OWOSSO, Mich. — Redmond's line of air conditioning replacement motors for units from ⅓ through 3 tons is described in a new four-page brochure, "Profits from Redmond," available by writing Distributors Div., Redmond Co., Inc., Owosso, Mich.

Complete performance data for the motors is included, along with dimension diagrams and photographs. Of special interest is the new "Quick Adjust" feature that makes it easy to fit these replacement motors into the bases now in the units, the company said.

Radiant Heating, Cooling

LIBERTYVILLE, Ill. — The Architectural Products Div., Burgess-Manning Co., 749A E. Park Ave. here, has released the first issue of its new external house publication—"The b.t.u."

Designed to be of prime interest to architects, consulting engineers, building owners, and school and hospital administrators, "The b.t.u."—a four-page illustrated publication — provides information, new trends, and technical data on radiant heating, cooling, and acoustic ceilings, the company said. It will be mailed monthly, at no charge, upon letterhead request to Architectural Products Div.

Valves

ST. LOUIS — Sporlan Valve Co. announced that it has supplied its wholesalers with literature racks containing a supply of new educational bulletins and product information bulletins. All members of the industry are invited to avail themselves of this literature.

Included in the assortment of bulletins is new Form 48 dealing with the installation, field service, and assembly of thermostatic expansion valves.

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Export Opportunities

Baghdad Firm Wants Air Conditioning Plant; Indian Auto Mfr. Seeks Joint Venture

WASHINGTON, D. C.—Baghdad (Iraq) Electricity Services is inviting bids until May 31 for the installation of an air conditioning plant in a building being constructed on Jamhuriya St., the Business & Defense Services Administration of the U. S. Department of Commerce reports.

A copy of the bidding documents may be obtained from the Baghdad Electricity Services on payment of five Iraqi dinars ($14) which is not refundable. Bids must be accompanied by an initial deposit or a bank guarantee for 1,000 Iraqi dinars ($2,800).

Other export trade opportunities announced recently by the BDSA include:

From **India,** Standard Motor Products of India, Ltd., an automobile manufacturer near Madras, desires to contact American firms interested in considering a joint venture for the manufacture of air conditioners, air and water coolers, refrigerators, or other appliances.

The company believes that it can use some of its automotive manufacturing machinery in such a venture and might buy a considerable proportion of electrical parts from small scale electrical enterprises developing rapidly in Madas.

The American consul at Madras comments that air conditioners and refrigerators are luxury goods in India but those capable of purchasing such goods constitute a sizeable market, which can be expected to broaden gradually.

Interested companies should contact K. V. Srinivasan, director, Standard Motor Products of India, Ltd., Mount Rd., Madras 2, India.

From **Mexico,** Manuel Gomez Ortigoza, owner of Fabrica de Hielo "El Fortin" in Oaxaca, wants to buy a complete ice plant installation with a daily capacity of 25 to 35 tons. His address is Ave. Hidalgo No. 119.

From **Germany,** several firms have expressed interest in air conditioners.

Weide & Co. and Deutsch-Westafrikanische Handelsgesellschaft, both of Hamburg, have expressed interest in acquiring American air conditioning units for re-export to Nigeria.

Weide seeks air conditioning units and air coolers for installation in private residences. Offers should be directed to the firm's branch, Weide & Co. (Nigeria) Ltd., Private Mail Bag 2391, in Lagos, Nigeria.

DWH wants units for homes, offices, factories, hospitals, and institutions operating on 220 volt, 50-cycle current. The firm's address is Poeseldorferweg 13, Hamburg 13, Germany.

Hans Schneider, Ingenieurbuero of 15 Kronprinzenstrasse, Essen/Ruhr, is interested in expanding its business operations by importing air conditioning equipment from the U. S. It already represents six U. S. firms in other fields.

Siemsson & Co. of Alsterufer 37, Hamburg 36, is offering the services of its sales organizations in several Far Eastern countries to promote U. S. exports of machinery into that area.

Siemsson maintains branches staffed by German sales engineers in Karachi, Saigon, Hong Kong, Taipei, and Seoul. It is also represented in Bangkok, Tokyo, and Osaka.

Aug. Roehl, G.m.b.H., Grosse Reichenstrasse 62, Hamburg 11, seeks air conditioning apparatus and units for installation in homes and industrial plants. Equipment should operate on 220 volts, 50-cycle current.

From **Greece,** Granitis S. A., a well-known engineering firm, wants to import small air conditioning units, heaters, and ventilators. Firm is located at 6 Ermou St., Athens.

From **Mozambique,** Radio Ultramarina, a retailer of electrical material and supplies in Lourenco Marques, desires an agency for air conditioners for household use. The firm, owned by Francisco Cardoso, is located at Ave. Alvares Cabral 57-D in the heart of Lourenco Marques.

U. S. Chamber Publishes New 'Foreign Commerce Handbook'

WASHINGTON, D. C. — The Chamber of Commerce of the United States announced the publication of the Fourteenth edition of the "Foreign Commerce Handbook."

This 155-page booklet contains a compilation of latest developments in foreign trade practices, procedures, and services, as well as other information useful to business firms, organizations, and individuals engaged in world trade, the chamber said.

In addition to basic information on 63 major subjects of particular interest in the international trade field, this completely revised 1960 handbook outlines the functions, activities, and services of the U. S. Government intergovernmental organizations, and business groups serving foreign commerce.

Also included is an extensive bibliography of over 600 selected reference works on trade.

Copies are available at $2 each from the Foreign Commerce of the United States, 1616 H St., N.W., Washington 6, D. C.

India Making 10,000 Air Conditioners A Year, Says Consul

MADRAS, India—Production of air conditioners in India now averages about 10,000 machines a year, reports Albert D. Moscotti, American consul here.

He said approximately 6,000 domestic refrigerators were produced between April and September, 1960.

Water cooler production exceeds 2,000 units annually, according to the report.

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A-B

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How One Commercial Refrigeration Distributor Sells Voluntary, Cooperative Food Merchandisers (2)

PHILIP HERMAN, vice president of Allied Store Equipment Co., Minneapolis, continues his discussion on selling to voluntary and cooperative food merchandising groups. Herman was speaking before the National Commercial Refrigerator Sales Association at its 14th annual convention.

"Let's take a look at the Nash Finch Co. for a minute. A good many of you know that Nash Finch is a very large factor in the local food business. Their headquarters is in our city but they do not service any stores in Minneapolis or its suburbs.

"In northern and western Minnesota, the Dakotas, and Iowa, their independents carry the Jack & Jill sign. In some areas, they have the Piggly-Wiggly franchise.

"In Iowa, they own and operate one corporate chain called Sun Mart and another corporate chain called Clifton's. In Kansas, they own and operate the Mammel chain. All told, they have 23 warehouses in nine states. Nash Finch provides all of the services which Super Valu provides right down to and including financing, store development, and location selection, but no store engineering. Here is where we fit into their picture.

"Our organization does the store engineering for those groups which are controlled by the Minneapolis office of the Nash Finch Co. Our plans include the entire building plans as well as complete fixture and merchandising plans.

'In Some Cases We Are the Landlord'

"We have also designed, engineered, and built some of their stores. In some cases, we are the landlord on a straight lease or lease purchase agreement. We also finance equipment purchases under specific conditions.

"Our program of construction is not limited just to Nash Finch. It is limited, however, to those groups which have a good sound store program, including direct and responsible supervision, and which are financially responsible.

Salesmen Work by Account

"Our salesmen work by account rather than by specific territory and there is a good reason for this. Each group has just a little different philosophy, a little different personality.

"Working by account, our representatives get to know each and every member of the organization better. He gets to know their Hot Button; he knows in just what geographical location the group is weak and where it wishes to increase its strength.

"He knows the way his account wants the store laid out; he can figure jobs faster and consequently — he can save money for both our company and his group account.

"By working on this basis, our account representative gains the confidence of the wholesaler much faster. In our area there is tremendous competition for locations. Our men are looking for locations at all times and have been responsible, more than once, for securing new locations or outlets for their accounts.

"This program leads us directly to the construction and leasing of stores and shopping centers. Although we have contracted for or supervised the construction of about 40 projects in the last three years, with our engineering and plans available on a fee basis, we are not primarily in the building construction business.

"We do not intend or plan to begin bidding competitively on every food store project that comes along. We are still primarily a refrigeration distributor and contractor.

Voluntary Groups Operate Differently

"We have several voluntary groups in our area, each one operating just a little differently than the next. This is due to a variety of reasons such as geographical location, where distances are great and population is small, because of corporate structure or maybe because of financial strength.

"A good example is the manner of charging for services or equipment. Some groups want to participate in the profit on the sale of equipment but do not want their retailer to know it.

"In this case—we figure the job according to the established program and add on what the group figures they should have. This then, is the price the retailer pays.

"*We believe* that the policy of *not* telling the retailer what they are paying for is *wrong* and we are not afraid to state our position on this. If a group participates in any profit on the sale of equipment, they should perform a function and should not fear telling the retailer.

"We have an agreement with another group which is known to all of their members. Two per cent is added to the price of equipment for headquarters. This percentage is put into a fund for financing equipment and locations.

"Super Valu publishes their fee schedule and makes absolutely sure that the retailer understands it. Their fee schedule is: 10% on the first $10,000, 7% on the next $20,000, 5% on the next $30,000, and 3% on anything over $60,000. On a $100,000 equipment package, the total fee would be $5,100 or 5.1%.

"Because each group is a little different, every program we have set up is based on sitting down with the management and discussing what they want and how best to achieve the results.

"We have taken a page from the wholesalers book and charge on the basis of what services are used.

"What we must remember and what we must *SELL* and *SELL* constantly—to both the wholesaler and the retailer—is that we all have a common goal which, obviously, is better stores that are better equipped to make better profits.

Voluntary Groups See Need for Distributor

"Just prior to coming down here, I asked the management of four different voluntary groups the following question:

"Do you have need of the services of a refrigeration equipment distributor and contractor?"

"I would like to quote from their replies:

"The first reply said, 'Yes, we do have need of the services of competent refrigeration distributors. Some time ago, we made the decision to buy equipment through distributors rather than direct from manufacturers. Some problems have arisen as a result of this but, the advantages, we feel, far outweigh the disadvantages.'

"The second reply was: 'Yes, we do need the services of a refrigeration distributor and contractor, We feel your firm has been very helpful to us in our program.'

"The next reply I will give to you in its entirety because I believe there is a message to us all in it.

" 'Yes, we do have need of refrigeration distributors. Allied seems to be a little more advanced in the work which they are doing to help wholesalers than the average equipment company. Most people who are selling equipment are doing that only and do not have a program.'

"The fourth reply said: 'Generally speaking, we certainly feel that the equipment distributor serves a legitimate function.'

"There is one parting fact which I should leave with you—

"This is a two-way street—to get, you must give.

"We preach the voluntary group story and urge the independents to join a voluntary group—especially if we have a program with that group. We do not work with one group alone nor do we work with all of them.

"No one voluntary group has ever accounted for more than 20% of our total volume in any given year. This is as it should be. There would be many problems such as personnel changes that may or may not bring about personality clashes; there are mergers; there are competitors taking pot shots at you. We have had that happen—so will you."

(The End)

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Wholesaler: Pacific Metals, Ltd. *Contractor,* Frank Samuels Distributing Co.

Dressed beef being conveyed from slaughter room to chill room.

At right, one of nine KRACK F1700ST ceiling units hold room at constant temperature, humidity level.

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21 KRACK units at Harbour Meat Co. **hold temperatures from -15° to +52°**

. . . according to Mr. Glenn Harbour, manager and partner, their meat packing plant in Tucson, Arizona, was designed and built from the ground up to assure retaining of meat quality through proper processing, cutting and aging.

"Quality is extremely important—we raise our own prime beef and want to make sure it gets to customers in top condition. Since refrigeration can mean the difference between good and bad meat, we had to have units that would hold temperatures dependably, at reasonable cost. We found that KRACK standard production units filled our specifications to the letter."

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1 Heavy duty water defrost unit cooler——ZE2000F
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1 5-ton evaporative condenser——1AE5
1 40-ton evaporative condenser with 9 circuits——4AE40
2 Air conditioning units for meat cutting rooms——CM400AC

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What This Business Needs Is

Imaginative Management

PROBLEMS OF business management have taken a prominent place in the minds of air conditioning, heating, and refrigeration contractors as their net earnings have shown a tendency to decrease. At the annual convention of Refrigeration & Air Conditioning Contractors Association (RACCA national), the matter of what the contractor might do in terms of management was discussed by Dr. E. A. Falls, executive secretary and director of research, Heating & Air Conditioning Research & Development Association, and widely known consultant on contractor management problems; and D. S. Shepherd, Jr., his associate.

Condensed reports of these discussions will be published in this and following issues. In this issue Dr. Falls discusses generally the management problems facing contractors today. Subsequent issues will cover "records and pricing" and "how productive is productive labor?"

MIAMI BEACH, Fla.—"Will we label the 1960's as we have labeled the last three years—a period of profitless prosperity?"

We needn't, insists Dr. Emol Falls, executive secretary and director of research for the Heating & Air Conditioning Research & Development Association, if we apply imaginative management and imaginative selling to our problems.

Speaking at the annual convention of the Refrigeration & Air Conditioning Contractors Association, Dr. Falls posed the question:

How are we going to make more money out of our business?

"We are going to do it with imaginative salesmanship and imaginative management," he responded.

"We are going to do it, because we are going to start looking at our records. We are going to start doing it because we desire to know the facts. We are going to do it because we realize that it is not altogether the man down the street who is the problem. (He thinks it is you.)

"A lot of folks say, 'I don't see how in the world that just because a man is aware and knows exactly what his costs are, how that is going to make him any money.'

"Well, it's real simple. A decision based on a fact is usually better than one based on a hunch or 'guesstimate.' Most of us can do a better job if we really know what is going on."

We Don't Know Facts—Or How To Use Them

The business operations advisor from Raleigh, N. C., commented that too many businessmen do not know the facts about their business—or if they have the facts, they don't know how to use them.

"We go into business after business," he related, "and the man will say, 'We are doing well. Let me show you a job we finished last week. We made 15% profit on this job.'

"You ask, 'Is this typical?'

"He says, 'Yes.'

"You say, 'Are you pretty busy on these kinds of jobs?'

"He says, 'Yes we are. We have plenty to do.'

"You say, 'How much did you net last year on sales?'

"He says, 'Well, I didn't have such a good year. We only netted 1 or 2%.'

"You say, 'Well, how do you account for the fact that every one of these jobs shows a net profit of 15% when your overall operations only netted 2%?'

"Something was wrong, and they lack the imagination oftentimes to add these facts together and say, 'I must have more costs on those individual jobs than I thought I had if when the total costs added together give me a loss and yet each job shows a profit.'"

To correct this situation, Dr. Fails pointed out, the businessman must learn to operate his business not on hunches and guesstimates, but on facts.

Records Gather Facts

"We are going to have to learn what is a fact and what is a guess," he said. "We are going to have to change our records for they are the instruments which gather facts."

If the manager is weak in interpreting records, he suggested, he should stopgap this shortcoming with someone who is strong in that department. "One of the first things that any manager must realize is his own limitations," he noted.

Dr. Fails asserted that the imaginative manager must plan the purposes of his firm.

"If your aim is just to make money, without realizing that you have to pay a price for earning money—when we don't know exactly how we are going to make it—how can we accentuate those things which we do well by planning to do more of them?" he asked.

"By evaluating our plan from time to time, we can measure the progress of that plan."

Get More Out of Employes

Another aspect of imaginative management is to get more use out of employes.

"The entire line staff organization is fast disappearing as we once knew it in company management," Dr. Fails observed. "It is getting to the point where problems are solved at the conference table.

"Yet it is surprising to me that business after business has not had a planning session or a discussion session with their people in months.

"We do not utilize the people we have if we do not give them an opportunity to express, criticize, suggest, and plan with us.

"Determine what your business is designed to do," he suggested, "then have frequent staff meetings to utilize the talents of all your people.

"Decide to learn what is going on, both in your business and out of your business.

"Decide to keep a good set of records. Consult them frequently. Base decisions on facts. Think. Use your imagination and the creativeness of your self and your entire firm."

Next Week, D. S. Shepherd, Jr. Takes Over. Costs, Pricing.

Set Up 2-Year Program at Ohio State To Train Young Men for Wholesaling

COLUMBUS, Ohio — R. J. "Bob" Woodward, national coordinator of education for the Northamerican Heating & Airconditioning Wholesalers Association, reported a "national first" for the Ohio wholesale industry—a training program designed to prepare young men for careers in wholesaling.

This new, two-year post-high school cooperative educational program has been developed under the auspices of NHAW, the Distributive Education Service of the State Dept. of Education, and in cooperation with the National Association of Wholesalers.

The program will be conducted on the Columbus campus of Ohio State university, under the direction of Dr. William B. Logan, professor of education and director of Distributive Education Institute.

Dr. Logan has developed a number of educational programs for NHAW, and will outline the program at the NHAW International Convention to be held in Montreal, Que., Can., May 21-23.

Serving in the capacity of Advisors to the Distributive Education staff, from the membership of NHAW, are R. J. Woodward and A. B. Lewis, Jr., the Palmer-Donavin Mfg. Co., Columbus; M. J. Gibbons, Sr., M. J. Gibbons Supply Co., Dayton; and W. R. Bull, executive director of NHAW.

Applicants for enrollment in the program must be employed by recognized Ohio wholesale firms before they can be accepted as a candidate for the course.

Students accepted will alternately attend classes at Ohio State university for a two-month "in school" session and work in "on the job" training sessions in various cooperating wholesale firms throughout the duration of the two-year program. This "work study program" is designed to give young men an opportunity to learn by doing.

In addition to the heating and air conditioning wholesale group, there are a number of other commodity line wholesale companies cooperating.

Young male high school graduates, 17 years of age or older, who are interested in applying for enrollment in the Wholesale Management Development Program should contact their local high school guidance counsellor, or write direct to Northamerican Heating & Air-Conditioning Wholesalers Association, 1200 W. Fifth Ave., Columbus 12, Ohio.

Plans are being made to extend this type of educational training throughout the country, it was stated..

Management Course For Wholesalers Set

WASHINGTON, D. C. — The National Association of Wholesalers has announced completion of arrangements for the sponsoring of its Tenth Annual Wholesale Executive Management Course to be presented by three universities in 1961.

The Ohio State University College of Commerce and Administration (June 11-17), The Wharton School of Finance and Commerce of the University of Pennsylvania (June 11-17) and the Graduate School of Business at Stanford university (Sept. 10-16) will again present this course to top management in wholesale firms.

All meals and lodging will be furnished on the three campuses. By special arrangements with the three universities, it is possible to hold the tuition for this full week's study—meals, room, books, pictures, and an opening "get acquainted party" on the Sunday night preceding each course opening—to $275, according to Paul L. Courtney, NAW executive vice president.

Inquiries regarding the course may be directed to the National Association of Wholesalers, 1001 Connecticut Ave., N.W., Washington 6, D. C.

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113	.044	.109
114	.050	.114
115	.055	.125
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118	.075	.125
119	.080	.145
120	.085	.145

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Al Hanson Heads CRAC Foundation; Ballard Also Named

LOS ANGELES—Al Hanson, president of National Refrigeration Sales, Inc., here, has been named chairman of the Certified Refrigeration & Air Conditioning Foundation (CRAC), industry promotion organization in Southern California.

Hanson will serve a one-year term as chairman of the foundation which is a function of a joint committee of representatives of the Southern California chapter of RACCA and members of Refrigeration Fitters, branch local #250, UA.

Gene Ballard, business manager of the local 250 union, was selected as secretary of the organization. He also will serve a one-year term.

CECIL BOLING (seated), president of Dunham-Bush, Inc., reviews with Edmund Adams (at Boling's right) plans for the company's new National Service Organization. Adams will direct the organization, which consists of three field service engineers and five regional service managers, one located at each of the firm's five United States plants. Members of the group are (l. to r.): A. L. Mattison, G. L. Jacquemin, J. Blatt, Martin Burget, E. Adams, T. J. Polak, E. Cook, Roy Carney, and Earl Attebery.

Dunham-Bush National Service Group--

(Continued from Page 1, Col. 2)

ham-Bush Marshalltown plant.

George L. Jacquemin, a 21-year Navy veteran who retired with the rank of lieutenant (J.G.), has been with Dunham-Bush since 1953, serving as research lab supervisor prior to his appointment as a field service engineer.

James N. Blatt has had 25 years' experience in the production and in-the-field installation of air conditioning and refrigeration equipment. Formerly with Brunner Mfg. Co., he served that company in several capacities, ranging from the manufacturing phases through design engineering, quality control, and field service engineering.

Martin H. Burger of Adrian, Mich., had been at the Michigan City plant of Dunham-Bush. Prior to joining the company, he headed his own refrigeration and air conditioning service organization.

Theodore J. Polak of Hartford was formerly with Pratt & Whitney Aircraft Corp. as an experimental test technician in the physical and engine test laboratory.

Edward L. Cook is a former resident engineer with Creamery Package Mfg. Co., and before that was chief application engineer with Baker Refrigeration Co.

Roy Carney Jr. of Danbury, Conn., is service manager for Heat-X, Inc., a Dunham-Bush subsidiary, and prior to joining that organization, operated his own air conditioning service organization in Tampa, Fla.

Earl Attebery has been with Dunham-Bush since 1954, serving in several production capacities in the manufacture of coils, air handling, and high side equipment at the company's Riverside, Calif., plant. Before joining the company he operated an electrical refrigeration and plumbing shop in Idaho.

These men will be responsible to the general managers of the individual plants at which they are headquartered and will be under the general supervision of Adams.

Working closely with the company's staff of district managers and field engineers, this service group will offer assistance in the proper application of Dunham-Bush products and will provide any service necessary on these products, it was pointed out.

California Refrigeration Fitters--

(Continued from Page 1, Col. 5)

"I fail to understand the causes for the dispute that exists between the two branches of local union 250. I am officially notifying you that to my knowledge any contracts you negotiate with your employers are as valid as any contracts negotiated by any other local union," the president stated in his telegram directed to the Southern California branch local.

Differences grew out of a meeting of the UA District Council #16 which had indicated that agreements made by the Refrigeration Fitters branch union local #250 were invalid. Basis of District 16's reasoning was that the local's master agreement had not been submitted to the district council for action.

Schoemann also indicated in his telegram that for the past ten years representatives of the branch have successfully negotiated agreements without conflict. "It is hard to understand why contractors are now being notified that there is something wrong with the validity of the agreement."

The differences were clarified during a meeting held in Washington, D. C., between Gene Ballard, business manager of the local 250 union, and Schoemann.

The UA president advised Ballard that there was no question as to the legality of the master agreement.

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NHAW--

(Continued from Page 1, Col. 3)

NHAW members and associate members will brainstorm the problem "What to do about your business during January, February, and March."

Luncheon speakers were not identified in the association's announcement.

Social activities include a social hour and reception at 6:30 p.m. on Sunday, May 21, and Tuesday, May 23; golf and sightseeing tours Tuesday afternoon, and banquet, floor show, and dancing Tuesday evening.

An optional tour of old Quebec City is scheduled for Wednesday morning.

Advance registration may be made until May 12 to the association's headquarters at 1200 W. Fifth Ave., Columbus 12, Ohio. Registration fee for men is $38.50 and for women $28. This includes two lunches, banquet, two social hours, and entertainment. In addition, for the men, it includes the membership breakfast Tuesday morning.

Registration charges at the convention will run somewhat higher.

Mardell Named

YONKERS, N. Y. — Frigid Igloo Mfg. Corp. here has appointed Morton H. Mardell as regional representative for Pennsylvania, Maryland, District of Columbia, and Virginia.

New York--

(Continued from Page 1, Col. 5)

conditioning work with the sheet metal industry in the equal role of prime contractors.

Under existing law, Kazakowitz wrote, one contract is let for both steam and hot water heating and for ventilating and air conditioning to a steam fitting contractor. The steam fitting contractor must then subcontract the ventilating and air conditioning work to a sheet metal contractor.

Thus, Kazakowitz argues, the proposed changes would save the taxpayers money by eliminating the necessary profit for two contractors on air conditioning work.

Kazakowitz asserted that Council members were the only elements of the industry in the state to give active support to the bills during the regular legislature session.

Climate Control Council includes 30 Long Island warm air heating, air conditioninig, roofing, and sheet metal contractors and 700 journeymen and apprentices of Local 55, Sheet Metal Workers Union.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
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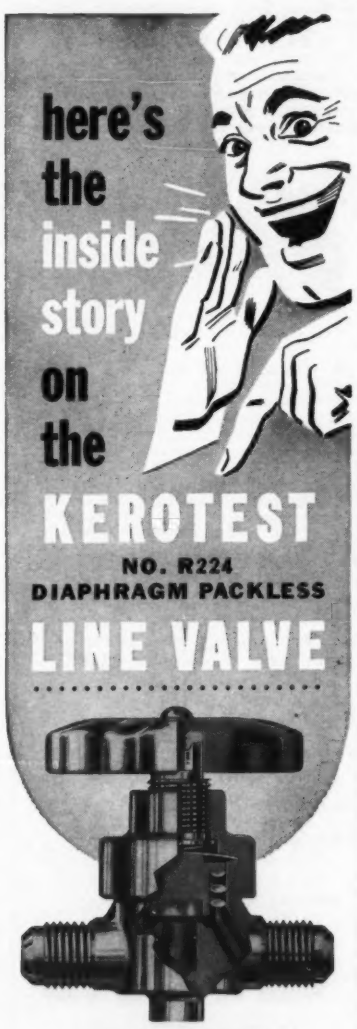

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Whenever the line voltage differs from the normal voltage required by the motor driven appliance, one of these Acme Electric Tapped Winding Transformers is the simplest and most economical means of correcting the problem.

For example: If only a 240 volt single phase circuit is available and the ½ HP motor of the air conditioner or other equipment is rated for 115 volts, a type T-32564 tapped winding transformer can be plugged into the line and will provide the exact voltage required. Or, if the available circuit is 208 volts and the 3 HP motor of the refrigeration compressor is rated at 230 volts, a type T-32610 transformer will solve the voltage problem. No need to do expensive re-wiring or order special motors.

Full details about the applications for Tapped Winding Transformers are contained in Bulletin 162. Write for your copy.

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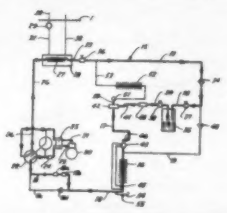
PATENTS

Week of Jan. 3

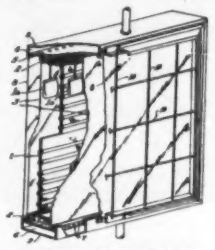
2,966,779. HEATING AND COOLING SYSTEM FOR MOTOR YACHTS. William A. Lintern, Painesvilles, and James W. Lintern, Unionville, Ohio, assignors to Larco, Inc., Painsville.

1. In combination, a power boat having an engine compartment, an engine therein, a plurality of passenger spaces isolated from the engine compartment, radiator units in the spaces, respectively, a reversible heating and cooling refrigerating system employing an expansible and compressible gaseous refrigerant, a compressor having an inlet and an outlet, a water-



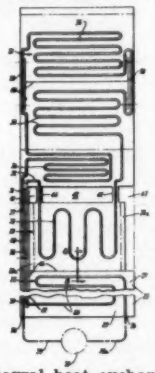
cooled condenser for the refrigerant, a refrigerant receiver having an inlet and an outlet, expansion valve means for the units, a settable sealed reversible circuit means operative. . . .

2,966,780. RADIANT COOLING SYSTEMS. Clarence A. Mills, Cincinnati, Ohio, assignor to Reflectotherm, Inc., Cincinnati, Ohio, a corporation of Ohio.



1. In a low temperature radiant cooling unit the combination in an enclosing cabinet of a vertically positioned carbon black coated plate coil provided with means for circulating a cooling medium through the coils of the plate, a pair of rigidly supported spaced sheets of polyethylene adjacent one surface of the carbon black coated plate coil and retained in a rigid frame, headers in the frame for admitting air with a controlled dew point and dry bulb temperature to pass between the polyethylene sheets.

2,966,781. REFRIGERATION APPARATUS AND METHODS OF MANUFACTURING THE SAME. Harold W. Schaefer, Philadelphia, and Franklin W. Edwards, Narberth, Pa., assignors to Philco Corp., Philadelphia, Pa.

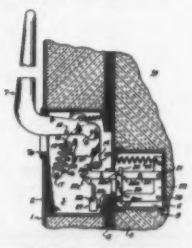


1. An integral heat exchanger sheet, with passages extending therein and bounded by solid sheet material to form a refrigerant circuit, said sheet comprising at least one pair of sheet and circuit portions, wherein the sheet portions are severed from one another by an elongate slit penetrating the sheet and longitudinally extending adjacent passages which extend in the sheet, said slit being substantially linear as seen in a plan view of the sheet. . . .

2,966,837. AIR DIFFUSER. Alan L. Radcliff, 2101 Calais Dr., Miami Beach, Fla.

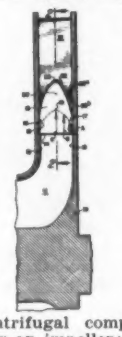
1. An air diffuser, comprising a round body having a central member comprising a disc-like wall member, and an outwardly flaring wall extending forwardly of and enclosing said disk-like member and having an upper round edge; a plurality of elongated rib-shaped gussets engaging said upper edge and extending outwardly radially from said walls in planes extending through said central axis, an outer member enclosing said central member and having an upper round edge located rearwardly of the first mentioned upper round edge. . . .

2,966,864. REFRIGERATOR LOCK WITH INSIDE RELEASE. Elmer R. Weaver, Chevy Chase, Md., assignor to the United States of America as represented by the Secretary of Commerce.



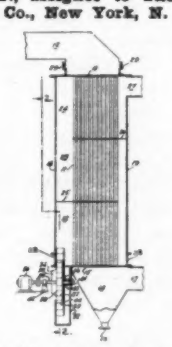
1. In combination, a closure, a cabinet, a gasket of resilient material positioned on said cabinet for sealing the space between the closure and cabinet, a rotatable member located on said cabinet, a keeper having an inactive and a cocked position pivotably mounted on said rotatable member, latching means including a positionable latch bolt movably mounted on said closure, said latch bolt positioned on said closure to engage said keeper when said closure is in contact with said gasket. . . .

2,967,013. DIFFUSER. Frederick Dallenbach, Phoenix, Ariz., Hans P. Eichenberger, Cleveland, Ohio, Eugen M. Knoernschild, Los Angeles, Calif., and Nguyen Van Le, Phoenix, Ariz.; said Dallenbach assignor to The Garrett Corp., Los Angeles, Calif.



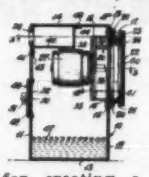
1. In a centrifugal compressor of the type having an impeller: a diffuser comprising a pair of walls spaced to define a flow passage for receiving fluid discharged at a supersonic rate by said impeller; said diffuser vanes disposed between said walls, said vanes having leading edge portions all points on which are disposed in spaced relation from the impeller at least the distance required by the fluid discharge to decrease to a subsonic rate of flow, said leading edges being shaped to correspond substantially to a pattern extending transversely of said flow passage established by points at which the rate of fluid flow from the impeller decreases from supersonic to subsonic.

2,967,047. HEAT EXCHANGE APPARATUS HAVING CENTRIFUGAL FAN. Donald C. Schluderberg, Montclair, N. Y., assignor to The Babcock & Wilcox Co., New York, N. Y.



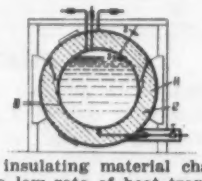
1. In combination, a heat exchange apparatus having a casing forming an air plenum chamber constructed to equalize the velocity effects of received air, an air outlet from said chamber for supplying air to said heat exchange apparatus for further use therein, said chamber having a pair of laterally spaced opposite walls, one of said walls having a circular air inlet therein open to the atmosphere, and means for maintaining the air in said chamber at a superatmospheric static pressure comprising a centrifugal air impeller rotatably mounted in said chamber coaxially with said air inlet and adjacent said one wall. . . .

2,967,051. MEANS FOR TREATING AIR TO PROVIDE COMFORT IN HOT AND COLD WEATHER. William R. Mobley, P.O. Box 2311, Miami, Fla.



1. Means for creating a localized zone of expanding air in a ventilated room or area, comprising a substantially closed cabinet having an air intake apertuure in the upper portion of a wall thereof and an air discharge aperture in the upper portion of an opposite wall of said cabinet for discharging treated air under pressure therefrom, a body of cooling liquid contained within the lower portion of said cabinet, a centrifugal fan rotor of substantially the same diameter as said air intake aperture mounted within said cabinet adjacent said intake aperture for drawing air therethrough into said cabinet. . . .

2,967,152. THERMAL INSULATION. Ladislas C. Matsch, Kenmore, and Arthur W. Francis, Dobbs Ferry, N. Y., assignors to Union Carbide Corp.



2. An insulating material characterized by a low rate of heat transfer by conduction and radiation, consisting essentially of finely divided low heat conductive particles of agglomerate sizes less than about 420 microns being selected from the group consisting of silica, perlite, alumina, magnesia and carbon black; and finely divided radiant heat reflecting bodies of sizes less than about 500 microns and constituting between 1% and 80% by weight of said insulating material, said heat reflecting bodies consisting of at least one member selected from the group consisting of aluminum, copper, aluminum paint pigments, copper paint pigments and copper coated mica.

2,967,153. SOLID DESICCANT. Harry H. Houston, Elmhurst, Ill., assignor to International Minerals & Chemical Corp.

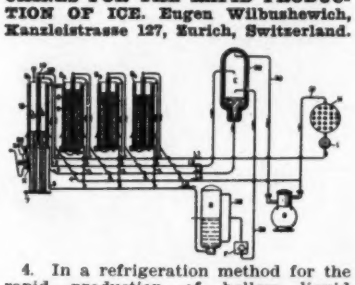
1. A substantially anhydrous lightweight solid desiccant suitable for the drying of moisture-containing gases from the top of said reactor, the rate of removing of catalyst from the reactor being substantially the same as the rate of charging of catalyst to the reactor.

2,967,154. CARRIER SUPPORTED DESICCANT. Henry P. Beerman, Evanston, Ill., assignor to International Minerals & Chemical Corp.

1. A desiccant comprising a porous carrier and a hygroscopic material on the surface of said carrier, there being present in said desiccant from about one to about nineteen parts by weight of said carrier per part by weight of said hygroscopic material, said porous carrier consisting essentially of a fired body formed from a mixture of clay and particulate expanded perlite, there being present in said body from about two to about nineteen parts by weight of said particulate perlite per part by weight of said clay.

Week of Jan. 10

2,967,402. METHODS AND MACHINES FOR THE RAPID PRODUCTION OF ICE. Eugen Wilbushewich, Kanzleistrasse 127, Zurich, Switzerland.



4. In a refrigeration method for the rapid production of hollow liquid frozen rods in molds defined by the walls of a core evaporator and a jacket evaporator, comprising circulating cold

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FIELD ENGINEER—Sales or service. 18 years' experience refrigeration, heating and air conditioning. 5 years with G-E distributor on heat pumps. 3 years 4 months with Airtemp as sales engineer for New Orleans area, 1 year as field engineer for southern Mississippi, Louisiana, Texas. Terminated April 15 due to personnel reduction. Will travel extensively. Married, 46 years old, perfect health. JAMES D. McGUFFEE, 2818 Palmer Avenue, New Orleans, Louisiana. Phone UN 6-3886.

ESTABLISHED REPRESENTATIVE desires line—ice vending equipment all sizes. Contacts made to vender distributors and refrigeration dealers. Territory to include North and South Carolina, Virginia, eastern Tennessee. Reply to representative, P. O. BOX 2602, Charlotte 1, North Carolina.

TECHNICIAN, AIR conditioning-heating, age 34, now residing in East, desires position in air conditioning or related product development and test with Midwestern or Western manufacturer. Nine years' experience includes test facility operation, test supervision, development and preproduction fabrication of varied units and heat pumps. BOX A6768, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

MANUFACTURERS' REPRESENTATIVES—Growth company has territories open for aggressive agents to handle popular commercial mid-tonnage range of split air-cooled air conditioning systems and heat pumps. Contact the Commercial Products Division, ADDISON PRODUCTS COMPANY, Addison, Michigan.

PARTS COUNTERMAN must have experience in refrigeration. GEORGE L. JOHNSTON COMPANY, 1420 Holden Avenue, Detroit 8, Michigan, TRinity 1-7000.

REFRIGERATION ENGINEERS, Jr. and Sr. Leading commercial refrigeration manufacturer located 30 miles south of Albany, N. Y., has outstanding opportunities for: Junior engineers experienced testing out, drawing conclusion and making recommendations. Some design and development background desired. Senior engineers experienced in all phases of developmental work preferably in the fractional horsepower range. Salary open, progressive management, excellent benefit program. Write fully and in confidence, stating experience and salary required to: BOX A6761, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER—Experienced sales engineer to sell air conditioning and refrigeration products in metropolitan New York area for well-established manufacturers' representative. Must have engineering background and sales experience to sell complete systems. Following among architects, engineers, builders and contractors desirable. Unusual opportunity due to combination of established products and unique new systems. BOX A6767, Air Conditioning, Heating & Refrigeration News.

EXPERIENCED SERVICEMEN with sales ability. Must have at least five years' experience servicing air conditioning and warm air equipment and contacting building maintenance management. Ground floor opportunity to become service manager with national manufacturer now expanding operations throughout Eastern and Southern half of U.S. Unlimited opportunity. Salary and generous profit-sharing plan. Send resume and snapshot. BOX A6769, Air Conditioning, Heating & Refrigeration News.

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NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. Also models 6B and F6B ammonia compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning and allied equipment. THE KEISER COMPANY, 1555 W. 79th St., Chicago 20, Illinois.

BRAND NEW icemaker pump motor and impeller repair kits for Scotsman Carrier $18.00 at Kesco wholesalers coast to coast. Bronze replacement icemaker pumps for York Carrier $29.95. Hose connection adaptors for York Carrier $1.00. Complete line condensate pumps from 10' to 50' head, 115-208-230 volts. Catalog. KESCO, Jamaica 13 N. Y.

NATIONAL KNOWN, brand new gas solenoid valve with safety pilot 20 volt 60 cyl. ¾" pipe model AH-4451-1 $8.75 ea.—85 pcs. Also oil capacitors 440 volts 35 mfd. metal can 90 pcs. $3.95 ea. Also compressor twin cyl. ½ h.p. model SG $22.50 ea. less flywheel 45 pcs. Also solenoid coil, type L27198 208 volt 60 cyl. uses on 4 way heat pump valve. 135 pcs. $1.45 ea. All merchandise in original boxes. R & R EQUIPMENT CO., 23-11 Steinway St., Long Island City 5, New York.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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WANTED—DISTRIBUTORS, dealers, agents, for our different circulating water treatment, Air-Con Emulsion Sand-Banum—The simple, safest method of keeping scale, rust and corrosion out of open type circulating systems. Removes scale and rust already present. Excellent discounts available. Write for information. Air-Con can add to your profits through repeat sales! AMERICAN SAND-BANUM COMPANY, INC., P. O. Box 4, Merrick, New York.

FOR LEASE—Refrigerated storage in Houston. Will lease reasonably all or part of 40,000 square feet. One of the finest refrigerated facilities in the Southwest. Thermostat-controlled, both dry and wet cold storage. Modern and new, centrally located with east access. Includes railway siding, conveyers, and air-conditioned office space. Will lease with option to buy equipment. Contact NED GILL, Oil & Gas Building, CA 5-0234, Houston, Texas.

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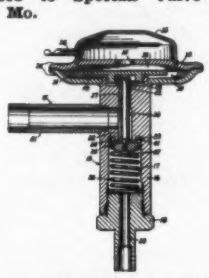
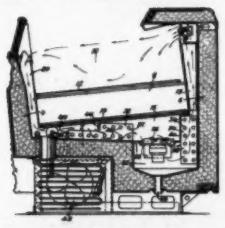
and hot refrigerant through the evaporators during alternating freezing and defrosting cycles, filling the molds with liquid to be frozen, and breaking the frozen rods; manually effecting an initial freezing and defrosting cycle to produce a first harvest of said frozen rods, automatically controlling the refrigerant circulation to the respective evaporators during the freezing and defrosting cycles. . . .

2,967,403. CONSTANT PRESSURE EXPANSION VALVE. Harold T. Lange, Huntleigh Village, and Edward F. Kounovsky, Webster Groves, Mo., assignors to Sporlan Valve Co., St. Louis, Mo.



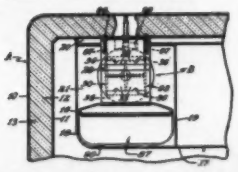
1. In a refrigeration system having a compressor, condenser and evaporator operatively interconnected, an expansion valve connected in the line between the condenser and evaporator, the expansion valve comprising a valve body having an inlet connected to the line leading from the condenser, and an outlet connected to the line leading to the evaporator, a valve body having a refrigerant passage therethrough connecting said valve inlet and outlet, a main valve movably mounted for controlling refrigerant flow through said passage. . . .

2,967,404. REFRIGERATED DISPLAY CASE. Wayne H. Detwiler, Philadelphia, Pa., assignor to C. V. Hill & Co., Inc., Trenton, N. J.



A refrigerated display case comprising an insulated bottom and insulated front, rear and end walls cooperating to define a display space open at the top for access to customers, a cold air duct extending upward adjacent one wall of the case and having an air outlet communicating with the display space near the top thereof, a return air duct extending upward adjacent an opposite wall of the case and having an air inlet communicating with the display space near the top thereof, an air passage located adjacent the bottom of the case beneath the display space and communicating with said cold air duct and said return air duct. . . .

2,967,406. ROTARY TYPE ICE CUBE MAKER. Edmund J. Buzicky, St. Paul, Minn., assignor to Whirlpool Corp., a corporation of Delaware.

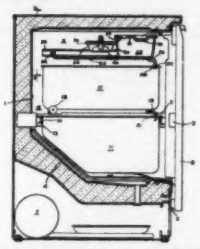


1. An ice cube making apparatus including an axis, a plurality of trays arranged in angularly spaced relation about said axis, means maintaining one of said trays in upright position at all times except during rotation of said trays about said axis, means including a weight spaced from said axis operable at predetermined intervals to rotate said trays about said axis in angular distance equal to the angular spacings of said trays, and a continuously rotatable motor for elevating said weight means.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

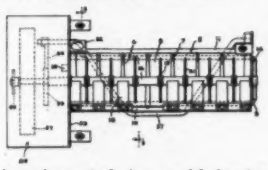
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,967,407. FREEZING TRAY AND ICE STORAGE ARRANGEMENT FOR REFRIGERATORS. Albert V. Melikian, Louisville, Ky., assignor to General Electric Co.



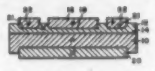
A refrigerator cabinet including a freezer compartment, a shelf slidably supported within said compartment adjacent the top thereof and movable to an extended position outside said compartment, said shelf including a framework adjacent and along the front edge thereof for receiving and positioning a removable ice receptacle, a freezing tray, means forming part of said shelf for pivotally supporting said tray rearwardly from said framework for movement. . . .

2,967,408. AUTOMATIC ICE MAKER. James L. Knight, Louisville, Ky., assignor to General Electric Co.



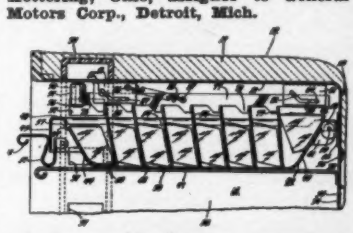
1. An elongated ice mold having a transverse arcuate contour and including a plurality of transverse dividers dividing said mold into a plurality of compartments in which a charge of water is frozen into ice pieces, a shaft rotatably supported above said mold and extending longitudinally thereof, discs mounted on said shaft and having peripheral edge portions immersed in the charge of water in said compartments whereby ice pieces formed in said compartments freeze into engagement with said disc. . . .

2,967,793. SEMICONDUCTOR DEVICES WITH BI-POLAR INJECTION CHARACTERISTICS. John Philips, Pittsburgh, Pa., assignor to Westinghouse Corp., East Pittsburgh, Pa.



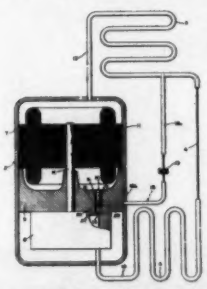
1. A semiconductor device having bi-polar injecting characteristics consisting of, (1) a first single crystal semiconductor element of a first type of semiconductivity, (2) a mass-of-metal in intimate contact with one side of said first semiconductor element, said mass-of-metal providing a source of minority carriers to said first element when energized by reverse electrical potential, (3) a second semiconductor element of a second type of semiconductivity on another side of said first element, (4) a first semiconductor transition region disposed between the first and second semiconductor element, (5) a third semiconductor element having the same type of semiconductivity as said first element. . . .

2,967,409. ICE HARVESTING ARRANGEMENT. Lloyd M. Keighley, Kettering, Ohio, assignor to General Motors Corp., Detroit, Mich.



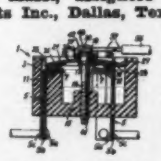
4. In combination, a support, a freezing device disposed in an upright position on said support, said freezing device including an elongated tray and a grid structure locked therein against detachment therefrom having spaced apart substantially inflexible walls anchored for tilting movement relative to said tray. . . .

2,967,410. MOTOR COOLING ARRANGEMENT FOR HERMETICALLY SEALED REFRIGERANT COMPRESSOR UNIT. James L. Schulze, Middletown, Ky., assignor to General Electric Co.



1. In a refrigeration system having a condenser, an evaporator, and a compressor, the combination comprising a hermetically sealed casing housing said compressor, a motor in said casing for driving said compressor, means for delivering low pressure refrigerant gas from said evaporator into said compressor. . . .

2,967,920. THERMOSTATIC SWITCH. Walter R. Harper, Jr., Barrington, R. I., and Curtis F. Kruger, North Attleboro, Mass., assignors to Texas Instruments Inc., Dallas, Texas.



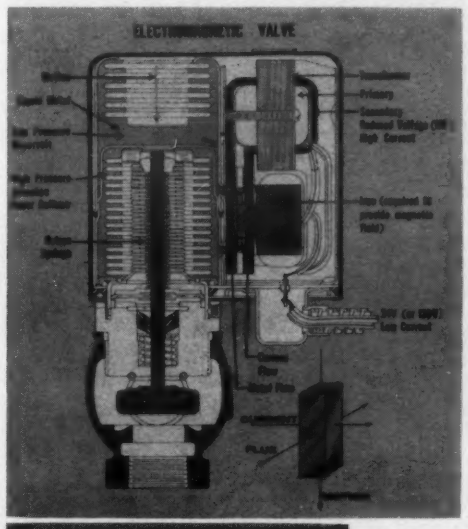
1. A thermostatic switch comprising a base, contact means fixed on the base, a snap-acting thermostatic element adapted to snap from a first to a second position upon reaching a predetermined temperature, and means for supporting said element on the base, said element having a hole therein, said supporting means having a shoulder and a stud extending from said shoulder through said hole, one side of said element being engageable with said shoulder, said element having contact portions on said one side engageable with said fixed contact means when said element is in its first position. . . .

2,967,964. SEMICONDUCTOR DEVICE. Noel C. Jamison, Irvington, N. Y., assignor to North American Philips Co., Inc.

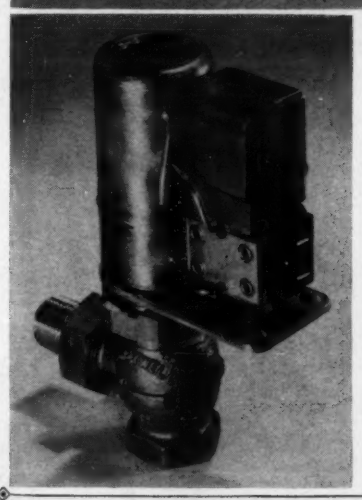
1. A semiconductor device comprising an envelope having a good heat-conducting portion, a semiconductive member mounted within said envelope, electrode connections to said semiconductive member, a metal, heat-dissipating member connected to the good heat-conducting portion of the envelope and extending within the envelope to an area closely spaced from a heat generating portion of the semiconductive member and its electrode connections, and a mass of metal particles having an insulating coating interposed between the semiconductive member and its electrodes, and the heat-dissipating member to shorten the path for heat flow thereto.

Honeywell Introduces Fluid Power Valve

A NEW ELECTRIC CONTROL VALVE based on an unusual operating principle has been introduced by Minneapolis-Honeywell's Commercial Div. It is called the "fluid-power" valve and uses an electromagnetic "pump" to move liquid metal to control fan-coil units, convectors, and radiators. With only three moving parts—valve stem, power bellows, and the liquid metal—the new valve has liquid smoothness, silence, speed, compactness, and exceptionally long life, the firm said. It will be available in both two and three-way models.



CROSS-SECTION SHOWS working components of the new valve. Reservoir bellows at top holds supply of liquid metal. Electromagnetic pump forces liquid metal from reservoir bellows to power bellows, thereby forcing valve stem down and closing disc against seat. Second bellows inside power bellows provides additional sealing. Current plus flux creates pressures to 50 psi and forces liquid metal to move from reservoir to power bellows.



BEFORE BEING SEALED in epoxy potting compound, Honeywell fluid-power valve looks like this. Cylindrical housing at left covers the three bellows (rings are reservoir bellows). Transformer is at right top with electrodes leading to electromagnetic pump. Beneath transformer is field winding which supplies pole pieces. Top tube is for filling reservoir with liquid metal; middle tube carries liquid metal from reservoir bellows to electromagnetic pump and lower tube ducts liquid metal from pump to power bellows.

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ASHRAE Research Facilities--

(Continued from Page 1, Col. 2)

laboratory, has been used for the past few years to investigate the reaction of healthy subjects to various thermal and radiant environments.

The room will be disassembled by the university this summer and transported to Manhattan, Kan. There, it will be reassembled in a new building and operated under a cooperatively financed program to augment the work now being completed in Cleveland.

Solar Calorimeter To Be Relocated

Concurrently with this announcement, E. P. Palmatier, chairman of the society's Research & Technical Committee, stated that the laboratory's solar calorimeter, which has been used for many years to study solar heat gain through glass and other structural components and the influence of shading devices on heat gain, will also be relocated.

It is ASHRAE's intention to donate this facility and its associated instrumentation to a university laboratory or experiment station interested in research.

Asks Bids on Lab Equipment

In addition, Palmatier revealed that the laboratory's general-purpose instruments and equipment are up for sale and that bids may be made prior to June 1, 1961.

At the present time, ASHRAE is reviewing its research program and is seriously considering the reorganization of its many and varied research and technical committees.

According to Palmatier, essentially all of the society's research and technical activities, exclusive of meeting programs and standards, will be handled by a single committee structure organized under the following group titles:

(1) Fundamentals; (2) Heating and Cooling Loads; (3) Heating; (4) Ventilating and Air Handling; (5) Refrigeration; (6) Air Conditioning; (7) Food Science and Refrigeration; (8) Domestic Refrigerators and Small Refrigeration Equipment; (9) Applied Equipment; (10) Auxiliary Equipment.

"Without a laboratory, much more committee work will be required to generate and monitor the increased number of projects in cooperative institutions," it was pointed out.

Sees More Applied Research In Future

"The society anticipates that much of the future research will probably be of an applied rather than fundamental type and more closely aligned with industry problems.

The Kansas State University Environmental Research Center has been established to (1) conduct research on human response to thermal environment as affecting health, comfort, learning, and productivity, (2) conduct research on air pollution problems relating to health and comfort, (3) collect and disseminate information regarding man and his environment, and (4) provide an educational program at the graduate level in environmental engineering.

For research programs funded by ASHRAE, an advisory panel, consisting of members appointed by the society and by the university, will advise and assist the resident staff.

Kansas State university through its Mechanical Engineering Dept., will assure the overhead and administration charges except on certain contracted projects and the Mechanical Engineering Dept. will also provide one or two graduate research assistantships.

Environmental research undertaken for ASHRAE will be on a cooperative basis, lasting two to five years per project.

If the presently conceived schedule can be met, environmental research will be resumed at Kansas State in the latter half of 1962.

Chemicator Incorporated To Produce Automatic Water Treatment Device

BURBANK, Calif. — Incorporation of Chemicator, Inc., for the manufacture and distribution of Chemicator, a new device for the automatic treatment of water in cooling towers and evaporative condensers, has been announced by Frank Card, president.

Majority interest in the new enterprise will be retained by Erlen Products Co. who developed Chemicator, it was stated.

According to Card, distributor of Chemicator feeders and associated chemical products is being made through refrigeration and air conditioning wholesalers and jobbers and additional outlets for the products are currently being negotiated.

Card noted that Chemicator operates from the recirculating water pressure and requires no electrical or mechanical equipment. Chemicator may normally be installed with simple tools in 20 minutes, he said.

Main offices of Chemicator will be located at 700 S. Flower St., Burbank. A 12-page illustrated brochure is available upon request.

Cincinnati--

(Continued from Page 1, Col. 4)

members of the Greater Cincinnati Heating & Cooling Association who gathered for the first time in seven months to hear it.

Carroll Crowe, retiring president of the association, claimed Gruber's assertion that about 5% of heating contractors employed "scare" selling tactics was exaggerated. He claimed that less than 1% used them.

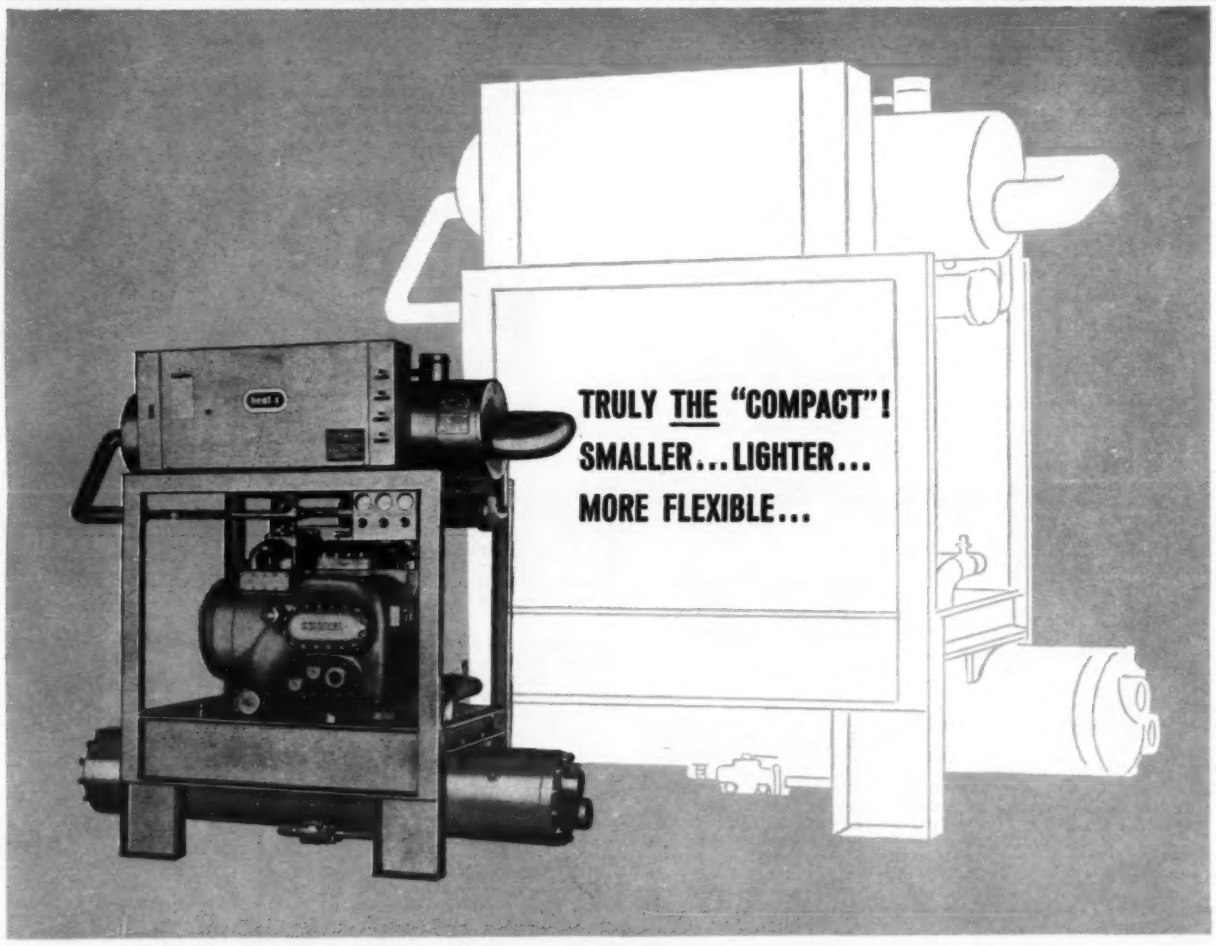
Under Gruber's proposal, contractors would have to register with the city before they could take out installation permits. If caught falsely condemning furnaces as dangerous in order to sell a new one, their registration would be revoked.

Thomas R. Rusk of Montgomery Heating & Air Conditioning Co., chairman of the association's committee to combat scare furnace selling, favors such an ordinance.

At least one small heating contractor opposed the idea on the grounds that it would be aimed at all door-to-door or telephone type canvassing.

A recent editorial in *The Cincinnati Enquirer,* quoting Rusk, warned the public to beware of "inspectors" who appear at the door or telephone offering free check-ups or cleaning at bait prices.

The association deferred any action on Gruber's proposal until after election of new officers.



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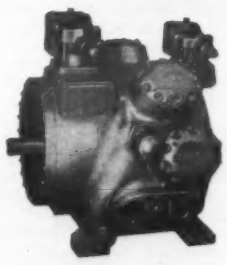

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